

THE RAILWAY GAZETTE

A Journal of Management, Engineering and Operation
INCORPORATING

Railway Engineer • TRANSPORT • The Railway News
The Railway Times • Herapath's Railway Journal • RAILWAY RECORD.
RAILWAYS • ESTABLISHED 1835 • THE RAILWAY OFFICIAL GAZETTE

PUBLISHED EVERY FRIDAY

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"

Telephone No.: WHITEHALL 9233 (12 lines)

Branch Offices:

GLASGOW: 87, UNION STREET

Telephone: Central 4646

NEWCASTLE-ON-TYNE: 4, ROYAL ARCADE, PILGRIM STREET

Telephone: Newcastle-on-Tyne 22239

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Telephone: Central 3101

BIRMINGHAM: 81, EDMUND STREET

Telephone: Central 3049

Annual subscription payable in advance and postage free

British Isles and Abroad £2 5s. 0d.

Single Copies One Shilling

Registered at the General Post Office, London, as a Newspaper

VOL. 90 No. 17

FRIDAY, APRIL 29, 1949

CONTENTS

	PAGE
Editorial Notes	457
Boys for the Jobs	459
The Summer Train Services	459
Health, Welfare, and Safety	460
Centenary of Reid's Railway Guide	461
British Railways Decline in Traffic	461
Road Transport Executive (Freight)	461
Letters to the Editor	462
The Scrap Heap	464
Overseas Railway Affairs	465
Locomotive Cylinder Design—II	466
Viaduct Cover-Plate Renewals under Traffic	469
Musical Broadcasts at Waterloo Station	470
New Hydraulic-Lift Hand Truck	474
Personal	475
British Transport Commission Statistics	478
British Railways' Summer Train Service Plans	480
Notes and News	482

DIESEL RAILWAY TRACTION

The May issue of this RAILWAY GAZETTE publication, illustrating and describing developments in Diesel Railway Traction, will be ready on May 1, price 2s.

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THE RAILWAY GAZETTE

33, TOTHILL STREET, WESTMINSTER, S.W.1

Railways and Coal Supplies

ONE of the major problems which has been besetting British Railways for some years, and which shows little sign of improvement, is the quality of coal available for use in locomotives. The present consumption of coal by the railways is of the order of 280,000 tons a week, and of this amount some 50 per cent. has to be taken in the form of lower-grade fuel for which locomotives built for use in this country are not adapted. The traditional fire boxes and boilers in use on British Railways are designed for high-grade locomotive coal, which before the war was in plentiful supply. The use of the lower-grade fuel now supplied to British Railways, in common with all other domestic consumers, has led to difficulties in firing and has had its result all too often in bad time keeping. In present circumstances, however, there seems little prospect of any considerable improvement in the amount of high-quality coal which will be available to the railways. Coal is one of the nation's best export products, and the need for ensuring a high level of shipments to countries able and willing to pay in hard currency restricts the amount of coal available for home consumption. The increased mechanisation of the mines which has taken place in recent years in an effort to secure greater total production has resulted in bringing to the surface a higher proportion of unsuitable coal and a lower proportion of the large sizes. The unfortunate results on the efficiency of British Railways of the present coal position are recognised, both by the Railway Executive and the Coal Board, but so long as national policy demands the maximum export of best quality fuel it seems unlikely that substantial improvement in the position will be possible. But for the difficulty in obtaining more coal, British Railways would have put forward bigger and better plans for attracting passengers and increasing their revenue this summer.

British Railway Investments in Brazil

During 1948 there was a decline of £5,382,060 to £207,973,684 in the total amount of Brazilian securities dealt in on the London market. The average return on this money was 3·1 per cent., and there was very nearly £34 million which received no interest, according to statistics compiled by *The South American Journal*. The railway group of investments has been unfortunate in its experience. Because of the Government having taken over the San Paulo Railway, but not yet having come to a decision as to the final amount to be paid, no interest has been paid by the company on its ordinary stock. The Leopoldina Railway Company has paid no interest on any of its securities. The total amount of British investments in railways in Brazil is £33,963,729, on which last year interest amounting to £336,961, or 0·9 per cent., was paid. The amount of capital receiving no interest was £28,489,852. The present overall return is the lowest since 1940, when it was 0·6 per cent., but the highest it has been in recent years is only 2·1 per cent.

Scottish Bus Nationalisation

Further progress has been made during the past month with the nationalisation of the extensive portion of the bus industry in Scotland headed by the Scottish Motor Traction Co. Ltd. An extraordinary general meeting of that company, held on April 8, passed with one dissentient a resolution approving the terms of agreement between the company and the British Transport Commission of March 17 last. The operating assets of the company have now been segregated between those which are passing to the B.T.C. and those which are remaining with the other S.M.T. shareholders. Two new companies were incorporated in Scotland on April 4 for this purpose, namely, Scottish Omnibuses Limited, and the S.M.T. Sales & Service Co. Ltd. The former has a capital of £50,000, and has taken over the whole of the bus undertaking of the S.M.T., but has not taken over any of the shares of any of the subsidiary companies. The S.M.T. Sales & Service Company has a capital of £500,000, and is taking over the motorcar sales and garage business of the S.M.T. As soon as the B.T.C. has paid the purchase price, it will hold the whole of the share capital of Scottish Omnibuses Limited. The purchase price of the transferable assets is £20,497,581, but, as the B.T.C.

already, owns half the ordinary stock of the S.M.T. (inherited from the L.M.S.R. and the L.N.E.R.), it will acquire the remaining half of the transport interests of the S.M.T. for approximately £10½ million, of which £8,598,791 will be satisfied by the allotment of £8,430,187 3 per cent. British Transport Wagon stock 1968-73 at 102 per cent., bearing interest as from April 1, 1949. The purchase price figure of £20,497,581 is made up as follows: Passenger road transport undertaking of the S.M.T. and ancillaries £6,000,000; shares held by the company in W. Alexander & Son Ltd. £5,727,273; shares in the Central S.M.T. Co. Ltd. £4,302,348; and shares in the Western S.M.T. Co. Ltd. and its subsidiaries £4,467,960.

* * * *

Overseas Railway Traffics

Declines in United of Havana traffics continued during the fortnight ended April 16, when receipts, at \$914,440, were \$215,788 below those for the equivalent period of last year; aggregate receipts for the current 41 weeks were down by \$3,571,348, at \$11,420,787. On the Antofagasta (Chili) & Bolivia, there were holidays on both the Bolivian and Chilean sections, so that traffics in the second week of the fortnight under review fell by £17,240. During the week ended April 10, however, traffics at £79,450, were up by £30,460, and, as a result, an overall advance of £13,220 was made for the two weeks. On the aggregate, Antofagasta receipts amounted to £1,057,600, as compared with £830,800 in 1948. Fluctuations in Great Western of Brazil receipts continued during the fortnight ended April 16, when an advance by £4,000 in the first week was followed by a £1,200 setback. Total traffics for the period were £71,500, and for the current 15 weeks are only £2,500 below 1948, at £597,600.

* * * *

Music for the Passenger

Nearly ten years of musical broadcasting at Waterloo Station have yielded an abundance of data from which the value of the installation as a passenger amenity and an aid to passenger handling may be assessed. The installation, which is dealt with elsewhere in this issue, was the subject of a census of public opinion last year, and assimilation of the information gathered has revealed not only a widespread interest in the music, but an 86 per cent. declaration in its favour, some passengers being almost eloquent in their praise. The general conclusion was that in tempering an otherwise austere atmosphere, the music played a considerable part in attracting passengers and was a definite contribution to the amenities of the regular traveller. Although the contribution of music to expeditious passenger handling is more difficult to evaluate, significance must be given to a long established association of music and human efficiency in a variety of other industrial quarters. Sir Thomas Browne's seventeenth century observation that "There is music wherever there is harmony, order, or proportion" maintains its potency today, and, at Waterloo, evidence suggests that these virtues, which should form an integral part of the atmosphere at any railway terminus, have been both ennobled and enhanced by the introduction of music.

* * * *

Economy in Bridge Strengthening

A simple and economical method of renewing, under traffic, the corroded top flange cover-plates of 50 plate-girder spans, forming the superstructure of a viaduct over 3,000 ft. in length, is described elsewhere in this issue. This method was found to be feasible only after careful investigation had shown that traffic could be passed over each span in turn, with its cover-plating and cross-bracings secured to the flange angles by a minimum of service bolts. This was permissible, however, only if stresses due to impact virtually could be eliminated by the imposition of a very severe speed restriction. The minimum number of bolts required was found to be 300 for each 80-ft. girder and 140 for each 40 ft. With the various preliminary measures, hauling out the old plates and drawing in the new, as well as with the necessary restoration works, the unbolting and bolting-up again of this comparatively small number of service bolts made it possible to restrict the periods of line occupation to 1½ hr. and 3 hr. in the case of two 40-ft. and two 80-ft. girders, respectively.

American Railway Operation in 1948

In a recent statement, Mr. William T. Faricy, President of the Association of American Railroads, enlarged on the fact that operation of railways in the United States had never been so efficient as in 1948. During that year they had carried an average of 1,175 tons per freight train, the highest figure on record, and, as average freight-train speed also had risen slightly, the net transportation per hour by the average freight train was greater than ever before. Freight ton-mileage, though slightly lower than the record peacetime figure for 1947, was 92 per cent. above that for 1939. Similarly, passenger-mileage was 12 per cent. lower than in 1947, but 78 per cent. above the 1939 figure. In 1948 they had spent over \$1½ billion on improvements, which included the provision of over 100,000 new freight wagons, another record figure, and more than 50 per cent. higher than the corresponding one for 1947. Despite the efficiency with which a vast volume of traffic had been handled, rapidly increasing costs had made it possible for the railways to earn a return on the net amount invested of barely 4½ per cent., out of which interest, rentals, other fixed charges, and a large sum towards improvements had to be paid before the shareholders received anything.

* * * *

Track and Structural Improvements Lagging

As examples of the inordinate rise in costs suffered by American railways during 1948, the prices of rails increased from \$55 to \$65 per net ton, or by over 18 per cent., and the price paid for sleepers rose by 17 per cent. during the 12 months. Labour costs also rose correspondingly and will continue to do so during 1949. Such increased costs of all-important materials and wages limited return on capital and were a menace to the welfare of American railways. Another disturbing factor was that the quantity of new rails for relaying was unsatisfactory and was considered sufficient neither to meet the needs of the great volume of traffic now being moved nor to regain ground lost during the war. Moreover, the number of sleepers laid in 1948 was lower than in any recent year, and only just half the number used annually for many years before 1930. Though capital expenditure on the improvement of fixed property was higher than at any time since 1930 and 15 per cent. greater than in 1947, it was only 26.5 per cent. of the total spent on all improvements, thus indicating that the ratio continues to fall. It would thus seem that track and structural improvements are neither adequate nor keeping pace with the provision of rolling stock and other equipment.

* * * *

Flame-Cleaning is Cheaper in Winter

Two identical 160-ft. through-truss bridge spans, each with 18,450 sq. ft. of exposed surface and some 54,000 rivet-heads, were recently flame-cleaned, wire-brushed, and immediately given a primer coat of paint. However, one was so treated in the cold weather of November and December in the United States, whereas the other was similarly cleaned and painted in July and August, when thermometers placed on the bridge members registered up to 146° in the sun. The cost of the winter-time work was \$5,373 or \$0.291 per sq. ft., but the job done in the summer cost \$6,600 or \$0.358 per sq. ft. The reason given by the Southern Railway (U.S.A.) engineers, who supervised both jobs, for this difference in cost is that in cold weather there is considerable condensation moisture present under the scale, which quickly becomes steam under the flame, so quickly as to cause small explosions, which aid cleaning by blowing off the scale. In summer, on the other hand, the moisture evaporates before treatment, and so there are no explosions, and a longer time is required for cleaning. Wire brushing and subsequent painting are done most effectively while the steelwork is still warm and dry from flame-cleaning.

* * * *

The U.S.A. Diesel Invasion

As yet the flood tide of substitution of diesel-electric for steam locomotive power on the railways of the United States shows no signs of abating. During the year 1948, as compared with orders for 67 steam locomotives, U.S.A. railways ordered no fewer than 2,579 diesel units, of a total b.h.p. of

3,480,650. It may be admitted that the average b.h.p. of each diesel unit is 1,320 only (for many of the diesels for road passenger and freight service will be used in twin-, triple-, and quadruple-unit formations), but even conceding an average i.h.p. of 5,000 for the modern steam locomotives, the latter still form no more than one-tenth of the diesel power on order. Latest available figures show that 38.7 per cent. of total passenger car-miles in the United States are now run by diesel locomotives, that diesels are responsible for 36.0 per cent. of the yard shunting-hr., and that in long-distance freight service they are handling 20.0 per cent. of the gross ton-miles. Considerably the largest proportion of the diesel units put on order during 1948 is intended for road freight service. It is estimated that by 1948 a total annual coal consumption of 24,843,600 tons had been displaced by the substitution of diesel-electric for steam locomotives in the U.S.A., a fact which is causing justifiable concern in the coal-mining areas.

Boys for the Jobs

THE revolution which is being imposed on the economy of this country by the Labour Party's nationalisation programme, has raised a number of problems which have caught many people unprepared—not least the pundits of the Labour Party itself. Among these problems is the question of how to provide suitable men for senior executive positions in the new State corporations.

Up to the present, a curious recipe has been followed in filling the seats of the various State boards. The essential ingredients appear to be a senior civil servant, an elderly trade unionist or two, a general or an air-marshal (preferably with political attachments on the Left), and a distinguished member of the Co-operative Wholesale Society. It is interesting to note that the only feature which these gentlemen are likely to have in common is a complete lack of experience in running the industry in question.

It is possible that public reaction against the revival of political patronage may force the Government to introduce a method of selection for the higher posts in State industry analogous to that employed for the Administrative Class of the home civil service. Whether this would produce better results is, however, open to question.

The method of selection and training of civil servants for the Administrative Class is admirable in its own way, and it undoubtedly produces civil servants of a very high calibre for the senior positions of the service. There is, however, a danger that the same type of training may become accepted as the proper qualification for the higher managerial posts in the State-owned industries. In fact, the training and outlook required for the successful management of a great industrial organisation is totally different from that which is appropriate to the hierarchy of the home civil service.

The senior civil servant is essentially concerned with memoranda, statistics, and accounting. He must be able to glance through a file of documents and quickly grasp the essential points of the matter in question. He must be able to write a non-committal reply to a parliamentary question, with a happy turn of phrase and skillful command of the English language, for the benefit of a dull-witted Minister. In short, he must be skilled in handling State papers, he must have an eye for figures, and he must be able to express himself in English.

The industrial manager on the other hand is concerned with the handling of men and equipment. He must command respect as an individual, he must be an able negotiator, and he must be versed in trades union matters. In addition he has to deal with the economic use of equipment of great capital value, and with the ordering and use of materials and stores. Not only must he have a business instinct, but in many cases he must have an engineering instinct as well.

There is no evidence that the civil service type of training is likely to bring out these qualities. There may certainly be individual cases where a senior civil servant has turned over successfully to business or industry, but such cases are altogether exceptional. There are a few unusually gifted persons who are capable of doing anything, but it would be very unwise to assume that every civil servant of the Administrative Class falls within this category.

The Summer Train Services

THE summer timetables will come into operation on May 23 and will remain in force until September 25, a week longer than last year. As will be seen from a report elsewhere in this issue, Sir Eustace Missenden, Chairman of the Railway Executive, has given a broad outline of the changes and improvements which are to be effected. Detailed comment must await the issue of the new timetables by each of the Regions. It is expected that this will be published within the next fortnight.

A further step is being made this year towards getting back to the pre-war level of service of the main-line railway companies. The weekly passenger train-mileage will be 4,417,266, which is 300,431 miles, or 7.3 per cent., more than last summer, and is equal to 80 per cent. of the pre-war summer mileage. Some of the cheap fare facilities operating this summer have been announced already. The number of additional trains which will be run on Saturdays only is 349. There will be 183 more on days other than Saturdays and 78 more on Sundays. A large increase is being made in the number of trains in which it will be possible to reserve seats in advance; this applies particularly to trains running on Saturdays only, for whereas last summer this facility applied only to 127 trains, this year it will be possible to reserve seats in 591 trains. There will be considerable increases also in the number of restaurant cars and buffet cars. Details of the numbers affected are given on page 480.

A number of the through trains between the industrial centres of the north of England and midlands and the south and south-west coast, which were in operation before the war, are being restored, and one or two new ones are being introduced. The practice which has been adopted on occasion in the Southern Region, of starting main-line expresses from outer suburban stations, will be extended to the Western Region, and on Friday nights and Saturday mornings some trains to the West of England and South Wales will leave from Ealing Broadway.

This summer a change is to be made in the running of services between London and High Wycombe and Princes Risborough. There is to be a fast train every hour and also a slow train every hour; these trains will all run from Marylebone instead of some from Paddington. In the peak hours the service between Marylebone and Ruislip will be extended. The new services from Marylebone will connect with the London Transport Executive line at Ruislip. This development, the transfer of a service from one station, Paddington, to another, Marylebone, on a different system, is presumably one of the first fruits of unified control of the railways.

More long-distance non-stop journeys and a number of accelerated main-line services are to be brought into operation. On the other hand, it is pointed out that speed restrictions are still necessary on account of pending track repairs, and time-keeping of trains is still affected by the inability to secure a sufficient supply of good-quality coal. About 280,000 tons of coal are consumed on British Railways each week, and of this amount 50 per cent. is low-grade fuel.

In addition to the named trains already operating, 13 more are to be introduced. Not all of these are new trains; *The Pines Express* and *The Devonian* are restorations. *The Capitals Limited*, which will leave Kings Cross at 9 a.m. and run non-stop to Edinburgh, is a new train. *The Flying Scotsman* will continue to run at 10 o'clock with three stops. *The White Rose* and *The West Riding* are two new names which are being given to trains running between Kings Cross and Leeds and Bradford. *The Devon Belle* and *The Thanet Belle* are being reintroduced in the Southern Region, and in Scotland five existing trains will be given names; these are *The Bon Accord* (Glasgow-Aberdeen), *The St. Mungo* (Glasgow-Aberdeen), *The Granite City* (Glasgow-Aberdeen), *The Fife Coast Express* (Glasgow-St. Andrews), *The Irishman* (Glasgow-Stranraer Harbour). A new train, bearing the name *The Fenman*, is to run between Liverpool Street and Hunstanton. No named trains are being introduced on the Western Region.

As we understand it, apart from the Pullman trains, these named trains are to be composed of standard stock and no supplementary fares are being charged. It is difficult, therefore, to see what extra revenue this plethora of named trains is expected to bring in, any more than will the new colour schemes for locomotives and rolling stock.

Health, Welfare, and Safety

THE Committee, under the Chairmanship of Sir Ernest Arthur Gowers, G.B.E., K.C.B., appointed by the Home Secretary and the Secretary of State for Scotland in January, 1946, has now concluded its work and has issued its report* on "Health, Welfare and Safety in Non-Industrial Employment" and "Hours of Employment of Juveniles."

The report is of special interest to railways, and in a lesser degree to road transport, for the Committee's recommendations raise some interesting issues and are likely to arouse acute discussion. Dealing with British Railways, with its half-million employees whose work lies outside the Factories Acts, the Committee records that it heard witnesses complaining that even after allowance had been made for the difficulties of the past ten years, buildings, accommodation, and equipment fell far short of what they ought to be, and were below the standards required for industrial workers under the Factories Acts.

For its part, the Railway Executive said in evidence that a joint welfare advisory council, consisting of representatives of the Executive and the trade unions, had been set up and was at present engaged in considering what standards of health, welfare and safety should be recommended to the British Transport Commission. The London Transport Executive, on the other hand, said that the machinery which existed before nationalisation was considered to be adequate for this purpose and that no such council had therefore been established in the undertakings controlled by it.

Both the Railway and London Transport Executives thought that the joint advisory councils (or the bodies functioning in lieu of them) would ensure that railway workers enjoyed satisfactory conditions of employment and that there was no need for minimum standards to be prescribed by statute. They pointed out that the councils were fully representative of employers and employed, and that their powers of making recommendations to the Executives and, through the Executives, to the Commission, were quite unfettered. They admitted that neither the Executives nor the Commission were bound to accept such recommendations and that there was no right of appeal to an independent third party, such as the Minister of Transport, but they contended that if the recommendations were rejected, there were means by which the employees, if they so desired, with propriety could pursue the matter in Parliament and elsewhere. Finally, they suggested the present system, which had scarcely begun to function, should have an extended trial before anything different was proposed.

Commenting on these submissions, the Committee states that "it would certainly have been our duty, if the railways had not been nationalised, to recommend a statutory code of welfare and safety for them, and we cannot accept the argument that this has become unnecessary because they are now nationalised and special machinery has been provided for consultation between management and workers on these matters. No one suggests that industries previously subject to protective legislation such as the Factories Acts should be exempted from it on nationalisation—the witnesses from the National Coal Board emphatically disclaimed any such idea—and we see no case for treating the Transport Commission differently."

The Committee devotes a special section of the report to locomotive running sheds, and reaches the conclusion that as employment in these sheds approaches so nearly to employment in many types of factories, minimum standards not lower than those prescribed by the Factories Acts and the regulations made under it, should be applied to the sheds themselves and to all ancillary premises. To implement this recommendation is likely to prove costly. Clearly, too, it is a matter, together with others contained in the report, which will have to be examined carefully by the Joint Welfare Advisory Council, as well as by the Commission, against the background of the Commission's finances.

On the question of offices, the Committee considers no distinction should be drawn between railway offices and similar establishments elsewhere, and the recommendations—here again of an idealistic type—cover sanitary accommodation; space (a minimum of 400 cu. ft. is stipulated); ventilation; temperature; lighting; underground rooms; cleanliness; washing

facilities; accommodation for clothing; seats; first aid; facilities for meals; and escape from fire. The Committee has felt it necessary to go so far as to cover places where so few as seven persons are employed in goods depots and sidings, and mention is even made of places where fewer than six persons are employed, including signal boxes and remote platelayers' and gangers' huts not in regular daily use.

Having gone into this detail, the Committee found itself face to face with the problem of enforcement. It is clear from paragraph 303 that the Committee had the sense to recognise that "the inspection of many types of railway premises needs technical knowledge," but it is obvious it was puzzled to know how the "enforcement" should be carried out, for it states it is "very reluctant to suggest an additional inspectorate." The solution is open to serious criticism. It has found a way out of the dilemma by recommending that "the enforcement of minimum standards of safety and welfare on all railway premises should be the responsibility of the Ministry of Transport, which should be empowered to establish an inspectorate for this purpose."

Here is an example of the official mind carrying planning too far! Another army of inspectors—of unspecified size or cost—is to be established by the Ministry of Transport to make quite sure that the British Transport Commission and the Railway Executive do not transgress by one jot or one tittle regulations made by Parliament. If they do, what sanctions are to be applied? Surely bodies of the standing and importance of the Commission and the Railway Executive can be trusted to have the good sense to respect the law and to safeguard the health, welfare and safety of their employees without the need for establishing over them an expensive and extensive inspectorate directed by the Ministry of Transport? Surely the Joint Welfare Advisory Council, representative of the trade unions and the Railway Executive, is not to be regarded as an irresponsible body likely to permit infringements of the law?

In the case of offices, enforcement is to be the responsibility of local authorities, which are also to enforce restrictions recommended by the Committee regarding hours of work of juveniles. "Working hours should be limited by statute to 45 per week," says the Committee, and no one is likely to cavil at this. The question of juveniles employed as engine cleaners, firemen and signal boys, at present called on to undertake night work, receives special consideration. The Committee records (paragraph 246) that it was represented by the Railway Executive "that night work by juvenile engine cleaners and firemen, and by signal boys, is also essential during the prevailing labour shortage. Although we cannot assess the practical difficulties of doing without them, we are not convinced that the case for the continued night employment of juveniles in these capacities is sound or even as strong as in mines or continuous process factories. Whatever doubt may exist about the interpretation of the International Conventions, their intention is clearly to prohibit such employment, and we feel sure that the practical objections to immediate prohibition should be subjected to a thorough examination before they are accepted. If it should then be decided to grant some temporary exemption for railway employment, we consider that special arrangements should be made at once to ensure that the health and welfare of young railway employees who work at night are adequately safeguarded."

In reading the report—which comprises over a hundred pages—we could not but wonder at the unreality of some of the Committee's proposals, but on turning back the pages we were relieved to find that the Committee itself felt this too. It was indeed sheer relief then to find these stark words: "We are considering conditions of employment in shops and offices at a time when the labour and materials necessary to improve them are not sufficiently available. We are considering proposals for shortening the hours of work of juveniles at a time when industry must devote all its energies to increasing output. We are considering the need for fresh legislation that could only be enforced by new or augmented inspectorates at a time when every available man and woman is wanted in productive employment."

These indeed are "plain words," worthy of the Committee's Chairman (and author of the pamphlet published under that title), and we can but hope that the Ministers to whom the report is addressed will give them all the weight they un-

doubtedly deserve. The time for more legislation is not yet! Moreover, it is clear that implementation of the provisions of the report would involve costs running into very large figures, and for this reason alone, careful consideration of the problems involved is essential.

Centenary of Reid's Railway Guide

THE firm of Andrew Reid & Company, of Newcastle, one of the best-known publishing houses in the North of England, has been associated with railway publications practically from the time of its formation in 1845, and since April, 1849, it has published regularly a timetable now represented by *Reid's Railway Guide*, which is celebrating its centenary this month by the reproduction in the current issue of a facsimile of the original cover, an advertisement engraved by Andrew Reid himself, and a specimen timetable from an early issue. Andrew Reid, who was an artist, engraver, and lithographer, appears to have issued his first railway publication in 1847, when he produced a folding strip map of the York & Newcastle Railway showing the principal features on each side of the line for the benefit of travellers. He then produced Reid's Illustrated Map of the Newcastle & Carlisle Railway for 3d., and in 1848 developed such publications into a series of "Reid's Railway Rides"—6d. plain, 1s. coloured. The "rides" were journeys from London to Glasgow, Edinburgh, and Dublin, in the form of long folding maps, illustrated with his own attractive little engravings of "gentlemen's seats and places of interest on or near the line."

Reid's Monthly Time Table, of which No. 1 was published in April, 1849, covered the counties of Northumberland, Durham, Cumberland, and the north part of Yorkshire. It was price 1d., and claims to have been the first 1d. railway timetable ever printed; the price remained at 1d. for 20 years. An edition of 2,000 copies represented ten days of hard work at a Stanhope hand press, but the venture was a success. The first issue contained fourteen pages and 90,000 figures, with very few advertisements. With the May, 1849, issue, a map was included, and there were many advertisements, including one for the delivery of coal in Newcastle at 6s. 6d. for 15 cwt. A jubilee booklet was published in April, 1899. Regular publication has continued, but the monthly sequence was broken during the period of acute paper shortage in the recent war, when the Guide could be issued only in alternate months. The number of the April, 1949, issue is, therefore, 1,161 and not 1,201. Two of the founder's grandsons (Mark and Kenneth Reid) and a great grandson (Edward Reid) are now directors of Andrew Reid & Co. Ltd. A kinsman, who is not connected with the business (Andrew Reid, of 11, Garrick Street, London, W.C.2), arranged a small private centenary exhibition at his office, for the benefit of the press, at which many of the firm's early railway productions were shown.

British Railways Decline in Traffic

THE falling off which has occurred in the traffic receipts of British Railways for a good many months now has caused a good deal of concern. So far there has been little sign of any check to the downward trend in passenger carrying, or in the more remunerative merchandise traffic. Recently, *The Manchester Guardian* published two articles by its Labour Correspondent which dealt at some length with the position of the railways.

In the first of these articles it is suggested that years of asking pointedly, "Is your journey really necessary?" impressed public consciousness with the fact that the railways were over-burdened with traffic, and wanted neither freight nor passengers—an impression, it is commented, that railway service in the immediate post-war years confirmed. Today, however, the railways are under-employed rather than overworked. Two years ago Sir Stafford Cripps was warning the nation that unless the turn-round time of wagons could be improved, and the repair of wagons quickened, the whole freight system of the railways would be in danger of breakdown. Now the railways want more freight to keep their wagons moving. Wartime and post-war difficulties have left the railways with a pretty bad reputation for delays in handling civilian goods.

One factor is the virtual disappearance during the war of braked goods trains. The pre-war service of fast freight trains fully fitted with vacuum brakes has not yet been restored, but about two-thirds of it has been brought back, and the fast freight trains could carry a great deal more traffic than they get. The Labour Correspondent of *The Manchester Guardian* instances a journey he made on one of the regular long-distance freight expresses from Camden Town goods yard to Manchester. This train, which could have taken 50 wagons if necessary, and would have hauled 45 with ease, consisted of only 32.

If the nationalised railways are ever to pay their way—as the Transport Act requires—they must not only provide fast freight services, but attract the traffic and regain the reputation for reliability. Commenting that this needs a contented labour force with a corporate spirit of service, as well as physical facilities for running trains, *The Manchester Guardian* says that "As a whole, railway staffs are far from contented, and unrest shows in the appallingly high bill—£4,000,000 last year—for goods damaged, lost or stolen in transit. It is reflected in a good many other ways too—in reluctance to work 'lodging terms' or duties requiring nights spent in a hostel away from home, in staying away from work for casual reasons, and so upsetting the rosters, and in general, unwillingness to put more into a job than the minimum required to keep it." Although the quality of railway staffs could do with improvements, numerically the railways are overstaffed, and the efforts of the Railway Executive to bring about economies create feelings of insecurity. So far nationalisation seems to have done little to improve labour relations, and there is a good deal of feeling among the men over the rejection of the recent claim for a flat-rate wage increase of 12s. 6d. a week. Since the article in *The Manchester Guardian* was published, the unions have taken further steps to bring the claims of their members before the Government.

Road Transport Executive (Freight)

(From a Correspondent)

THE January and February numbers of the 1949 series of *Transport Statistics* contain some useful information about freight haulage performed by the Road Transport Executive on behalf of the British Transport Commission. Particulars are also supplied for the first time of the number of motor and horse-drawn vehicles used by British Railways for road cartage. The table below shows that in February the Railways operated a larger force than Road Transport (Freight).

	British Railways	Road Transport (Freight)
Motor vehicles ...	12,474	9,159
Trailers ...	16,120	1,882
Horse-drawn vehicles ...	24,585	2,065
Horses ...	7,217	1,055

The tonnage carted by the railways is not given, but Road Transport (Freight) carried 774,000 tons in January and 859,000 tons in February. The corresponding vehicle miles were 10,754,000 in January and 11,835,000 in February. The February tonnage is only 62 per cent. of the increase in railway freight traffic during that period, but without ton-mile figures the amount of work done by Road Transport (Freight) cannot be gauged accurately. The Minister of Transport has stated that the total number of road vehicles to be taken over by the Commission is not likely to exceed 50,000. A fleet of that size, judging by the January and February results, may be capable of handling about 1,000,000 tons a week, provided that the average length of haul does not increase unduly.

In February the administrative and clerical staff of Road Transport (Freight) numbered 5,105 and in addition 926 supervisors were engaged in controlling operations and maintenance, so that 6,000 people in all were employed on higher grade duties out of a total staff of 25,000. Thus for every two vehicles on the road, one person was employed on administrative, clerical or supervisory work. We appreciate that for a time the higher grades may be swollen by employees transferred from acquired undertakings, but the present establishment seems to be excessive for an undertaking with gross receipts of only £337,000 in an average week.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

First Junction Indicator in India

Merefleet, Beaumont Rise,
Marlow. April 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I question the accuracy of Mr. H. C. Tower's statement in today's issue of *The Railway Gazette* that the B.B.C.I.R. "is the first railway in India to make use of the 'junction indicator'." I believe that this honour belongs to the late Bengal-Assam Railway which installed a position light junction indicator at its "Mile 5 B" cabin in 1945. The section concerned now forms part of the Sealdah Division of the East Indian Railway.

Yours faithfully,
G. E. CUFFE

The Hotels Executive

Hampstead, N.W.3. April 18

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The article headed "Lord Inman's Intentions" in your April 8 issue gives figures for a year's business in railway hotels, restaurant cars, and refreshment rooms. The figures run to millions and may impress at a first glance, but one wonders whether the old companies did not serve more people in the palmy days of railway travel. In the year of amalgamation, 1923, the number of passenger journeys originating on the four main lines alone was 1,319,000,000; by 1937 the number fell to 1,210,000,000. Last year the number of journeys on the whole of British Railways was barely 1,002,000,000, so that the Hotels Executive came into being at the leanest time on record for passenger traffic. For the first quarter of this year the trend has been downward still and seems bound to lessen the demand for railway catering.

The present circumstances are unfortunate for the Railway and Hotels Executives. This is not the time for either of these bodies to contemplate the spending of much money on passenger station premises. If they are wise, they will be content to carry out only essential maintenance and such improvements as will not involve substantial capital expenditure. Other intentions, however well-meant and commendable, should wait until statistics of passenger carryings and takings tell a more encouraging story.

Yours faithfully,
STATISTICIAN

The Russian Railways

7, Audley Road,
Ealing, London, W.5. April 21

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read with much interest the editorial article in your issue of April 15 dealing with my recently published book, "The Russian Railways."

May I say at once that I entirely agree with your remarks on the difficulty of assessing the reliability of Soviet railway statistics? So long as no freedom is given to railwaymen from other parts of the world to examine the Russian railways freely, some suspicion must necessarily attach to statistics of railway operations in the U.S.S.R.

On the other hand, it would appear that many of the basic Russian railway statistics, even if they are erroneous, cannot be grossly so. You express surprise, for example, that the 1937 Soviet figures should indicate that freight traffic on the Russian railways was three times as dense as on the American railways. But the U.S.S.R. had in 1937 only 52,865 route-miles of railways with which to sustain a population of nearly 200,000,000, whereas the U.S.A. had 238,539 route-miles of line with which to serve only 130,000,000 people. Even allowing for a considerably lower standard of living in the Soviet Union, it is surely obvious that there must be a much higher density of railway traffic per mile of line in the U.S.S.R. than in America.

It cannot be denied that some individual railways in the United States, such as the Pennsylvania Railroad, show high traffic densities and good operating results. But taking the U.S.A. railways as a whole, the picture is by no means so good. In 1938, for example, the average line density over all Class I American railways amounted to only five trains (goods and passenger) per day in each direction. Again, although (as you state) the average capacity of an American wagon in 1937 amounted to 49.2 tons, the average actual load per wagon amounted to only 16.6 tons (*i.e.*, the average freight train load

was 796 tons and the average number of wagons per train was 48).

Your editorial also expresses surprise that, according to Russian statistics, there was twice as much passenger traffic on the Soviet railways in 1937 as on the American railways. Even in Great Britain, with less than one-tenth the route-mileage of the railways of the U.S.A., the number of passenger journeys made by rail is several times larger than in America. In 1938, for example, rail passenger journeys in Britain (excluding London Transport) amounted to 1,237,242,000, compared with only 452,731,040 on all Class I American lines. Moreover, the average length of journey in Great Britain in that year was 16 miles, which does not make the figure of 48 miles for the average length of journey in the same year in the U.S.S.R.—a country with 90 times the area—seem unreasonable or excessive; the average length of journey in America in that year was also 48 miles.

Finally, I would recall that many of the statistics on the density of traffic in the U.S.S.R., which you now suggest are likely to be exaggerated, were quoted by Professor Khachaturov, of the Soviet Railway Research Institute, in an article which was featured in your issue of March 16, 1945, and which you did not question in your editorial on the subject at that time.

Yours faithfully,
P. E. GARBUTT

Flowers—and Chestnuts—that Bloom in the Spring

25, Pewley Hill,
Guildford, Surrey. April 11

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—British Railways have a poster on the Southern Electric—"Spring in the Country." It invites one to visit the country where, seemingly, daffodils bloom "under a spreading chestnut tree" also in bloom.

Is this "artist's licence" or has the nationalisation of railways enabled us to be taken, by rail, to places where horse-chestnuts and daffodils bloom together in the Spring?

Yours faithfully,
E. ANDERSON (MRS.)

Train Control in the Netherlands

Netherlands Railways,
Breda Inspectorate, Breda. April 11

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Although I have appreciated Mr. MacDiarmid's letter in your issue dated February 25, page 202, recollecting the gigantic performance and help of the Royal Engineers in liberating our country, I would like to express a different opinion regarding a few points.

First I would like to point out that actually the graphical system of train control on the Netherlands Railways existed since 1943, in the Southern Division (H.Q. at Heerlen). Train control itself—though in a moderate form—commenced as early as 1940 for the main lines of our system, including freight trains only, and was found very useful for the controlling of heavy irregular traffic, in particular coal (loaded up north, emptied down to the various collieries according to respective indents).

As early as October, 1944, the Netherlands Railways reopened the lines in the Eindhoven area, and even started passenger traffic with effect from November 6. There was no Railway Operating Unit present at the time, and we had installed three shifts of controllers in Eindhoven Station, controlling the lines Eindhoven—Achel (Belgium), Eindhoven—Bata, and Eindhoven—Helmond. On December 14 No. 182 Railway Operating Company installed a military train control. We realised they had a more efficient way of controlling military traffic. The co-operation between Major Wilkinson's staff and ours was splendid.

Up to that date our controlling had to be done by means of our ordinary telephone and thus could not be so effective as the British system using head-sets and a special control 'phone circuit. Also our rules were less stringent, *e.g.*, no stationmaster had to ask permission for any shunting blocking main lines. I gather it was this feature of allied train control which caused the system to be disliked by some of the Netherlands personnel, and maybe some of the new controllers in Tilburg, who were not used to the graphical system of the Southern Division, did not realise at first the benefit of the system. However, I must strongly oppose the idea that the responsible Netherlands officers did not like the system at first or that they were considering abandoning the graphical system.

Obviously D.D. Railways "Holland and Forward" did not share that idea, as he agreed on the taking over by the Netherlands Railways of both control 'phone and responsibility from No. 4 Railway Operating Group with effect from March 9, 1945. Our controllers dealt with the ever-growing stream of military and civil trains, and on many occasions high praise was given to them by Allied officials. If we had not wholeheartedly applied the system of graphic train control and trained our controllers and stationmasters from the very start, I much doubt if we would have achieved the same results.

We look forward to the promised visit of Mr. MacDiarmid and all the others to express our gratitude and to show them how the Netherlands Railways work in peacetime.

Yours faithfully,
J. P. S. LUCARDIE,
D.D. Operating Superintendent

Juvisy Yard

Operating School, British Railways,
Grantly, Carmel Road, Darlington. April 6
TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I hope you will not mind my troubling you, but having looked at the very impressive photograph of the Juvisy Yard which appears on page 358 of your issue dated April 1, I cannot help but wonder whether there has been some mistake.

It states that "in this yard 1,500 wagons are handled daily." Is this by any chance a misprint for "per 8-hour shift"—1,500 a day is just about the number we should expect at a small yard that had not a hump?

Yours faithfully,
T. BERNARD HARE,
Principal

[We queried the figure with the French Railways' London Office which believes it to be correct. Toton Down Yard handles between 3,000 and 5,000 wagons in 24 hr. on peak days, but it is rather larger than Juvisy and contains 35 siding roads radiating from the hump. The Whitmoor Yard is about twice the size of that at Juvisy, and deals with 1,368 wagons in an eight-hour shift. That would be about 4,000 wagons in 24 hr., assuming continual working, and in view of the relative sizes of the two yards it would not make the figure of 1,500 for Juvisy much out. We understand in any case that most of the activity at Juvisy takes place between about 10 p.m. and 6 a.m.—Ed., R.G.]

Restaurant-Car Meals

23, Somertrees Avenue,
London, S.E.12. April 13
TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I do not know whether the excuse advanced by Lord Inmar for the bad luncheon served to the Dean of Smethwick and others on the 10.10 a.m. from Birmingham to Euston—"that the day was Monday"—which was recorded in your March 11 issue, is to be taken seriously, or whether the dissatisfied passenger must accept the explanation generally offered by the attendants on restaurant-cars, who usually put the blame on whatever hotel may have provisioned the car, but I do not believe that these isolated experiences of good or bad meals, such as those quoted by "Occasional Traveller" in your issue of April 8, are fair to the Hotels Executive. Many factors—the crowded condition, or otherwise, of train or car, the time available for serving the meal, and the attitude of the attendants—contribute to the impression left in the passenger's mind. I could instance a recent lunch on a Euston to Wolverhampton train (provisioned from the Birmingham end) when, after spaghetti or melon had been offered us as alternatives to soup, roast goose or a chicken-dish followed as the main course, with a choice of two excellent sweets (trifle or apple meringue) and a fresh salad procured for a vegetarian diner, or I could quote a meal on a Birmingham to Paddington train, where linen and cutlery were far from clean, service was bad, and rabbit, masquerading as "veal," was the main course. The former was on a train by no means full and providing only one luncheon service, and the latter was a second sitting, with every restaurant-car seat occupied on a very crowded train, where the staff was being worked to its limit.

Speaking of my own experiences generally (and I find they are endorsed by many regular travellers) I should say that the least obliging staffs, and certainly the most meagre portions of food, are now to be found on the Midland division of the London Midland Region, which is a very sad admission from anyone who remembers Midland catering in the early days of the Towle régime. On a Bradford to London car, quite recently, a lady, sitting opposite to me, was so

incensed by the exiguous portions offered that the conductor, after blaming the Bradford hotel, had to quieten her by second helpings of two courses, and it is always amusing to compare the quantity offered at a "Midland" tea with what is usually provided nowadays on a Western division London Midland car.

A tactful conductor can generally manage to "put over" an unsatisfactory meal, though it is to be hoped that we may soon see a levelling-up of service to the standard of the best, in cars and refreshment-rooms. I mention the latter partly because I imagine these train-trolleys will be equipped by the refreshment-rooms, and also because I recently experienced, in an old and very shabby room in the Scottish Region (late L.N.E.R.), quite the best selection of food I have ever seen in any refreshment-room, all fresh and tastefully displayed under cover, so that out-of-date premises must not be accepted as the excuse for poor food. A "Midland" (London Midland) room in Northamptonshire was a very good second, yet less than thirty miles away, in modern premises in a larger town, were refreshment rooms where food and service were undeniably bad, the former being displayed, uncovered, in a room where decorators were at work!

Yours faithfully,
R. E. CHARLEWOOD

London Bus Route Numbers

"Waverley."
25, Tower Road,
Orpington, Kent. April 5

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Reading your article with reference to the RT type of London omnibus on page 310 of *The Railway Gazette* for March 25 brings to my mind something which I consider of paramount interest for the consideration of Lord Latham and the London Transport Executive, particularly as at present authorities throughout the country are emphasising the extreme necessity for caution and road-sense in every effort to minimise accidents on the highway.

The majority of RT-type buses are now fitted with large and distinct route numbers on the offside of the vehicle. Although informative, they invite possible intending passengers on the other side of the road to take the risk of rashly crossing the highway at other than specific pedestrian crossings, thus immediately courting the dangers of injury, and death.

Such route numbers should be strictly confined to the indicators on the front and back of the omnibus and, perhaps, on the near side where passengers board the vehicle from the adjacent pavement.

I say, eliminate one likely cause of pedestrian accident at the outset!

Yours faithfully,
DOUGLAS D. CASTELL

Major Developments in Locomotive Design

Sussex. February 21

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—While agreeing with you that "it must have been a difficult matter to decide what items to include and what to omit in such a list" as you published in your article under this heading in your issue of February 11, I should appreciate some information on the following points. Is each item in the list quoted as the first or the most important example of its type? For instance, 1912—Whitelegg's Baltic tank. I am not sure of the date of Billinton's first Baltic, but it was probably the better known as being used on faster services. On the other hand, 1882—Stroudley's "Gladstone" was the last of his 0-4-2 designs, unless I am mistaken.

It seems curious that there is no mention of any tank engines built entirely for express work, unless one includes the 4-2-4 Bristol & Exeter engines. There were Marsh's 4-4-2 and 4-6-2, Billinton's 4-6-4, and Maunsell's 2-6-4 types on the L.B.S.C. and Southern lines, even if none elsewhere can be included in this category. Then, D. Drummond's feedwater heating on the L.S.W.R. is mentioned, but not his water-tube firebox, though feedwater heating on that line in 1854 is included. Notable omissions seem to be the inside-cylinder 4-4-2 type on the L.Y.R. and the famous 2-2-2 express engines on the G.N.R., though both these and the express tanks would seem to be of greater importance than smoke-deflector plates and the 0-6-0 austerity locomotives on the S.R.

There are, probably, excellent reasons for these seemingly-curious omissions or inclusions, but it would be interesting to learn what they are.

Yours faithfully,
ENQUIRER

The Scrap Heap

DRIVER WINS GOLF TROPHY

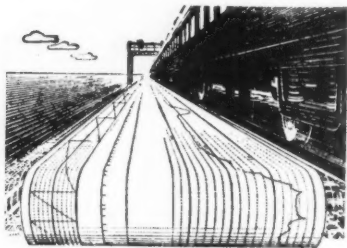
Mr. Harry Elshaw, an engine driver in the London Midland Region, British Railways, has won his first golf trophy, the Municipal Bowl awarded by the *Sheffield Telegraph*. Mr. Elshaw is a member of the Beauchief Golf Club, Sheffield.

TRAIN PHONE CALL FROM U.S.A. TO LONDON

A telephone call was made to London on April 14 from a train travelling between New York and Washington. Mr. James Maxwell, in the train, rang Sir Alexander Maxwell, Chairman of the British Tourist & Holiday Board. Said Sir Alexander Maxwell: "I look forward to British trains providing this facility."—*From the "Daily Express."*

AUTOMATIC RECORDING OF LOCOMOTIVE WORKING

The French Railways Limited advertisement reproduced below, aptly calls attention to the remarkable fact that every locomotive on the French National Railways is fitted with a Flaman recorder. As well as indicating to the driver and recording in graphic form speeds and other related information, this type of recorder indicates when a home signal is in the "on" position as the distant is passed, and records the driver's acknowledgment of this warning. It also provides a wealth of other information so that the graph automatically recorded can be studied subsequently to furnish a detailed description of every engine run.



Safety Record...

Did you know that every journey made by a French locomotive is exactly recorded—every yard of it—on the Flaman apparatus carried in the cab? As the train runs, a mechanical pen draws a chart of its speed and punctuality. So precise is this record that when a signal ahead is at danger, the Flaman records the fact automatically as it passes the preceding or "distant" signal. The driver must acknowledge the warning, and this acknowledgement is duly recorded by the instrument. Recording angel? Yes, but guardian angel, too.

TRAVEL BY TRAIN

IN

FRANCE

for Safety, Comfort and Punctuality

One of the new series of announcements by the S.N.C.F. (see paragraph above)

ROAD AND RAIL

First-class highways are not essential to our national economy. Prior to 1914 road transport was unknown, and the railways carried the whole of the country's traffic, and could do again if given the chance. If this is a fact, why go to the expense of creating new roads, robbing the country of useful land, which will grow food and feed cattle for our rapidly-diminishing meat supply?

The answer to the accidents on the roads, the present congestion and delay, caused by heavy lorries and trailers littering up the roads, is to put the traffic back on to the railways, which were specially built for it, and can still deal with it efficiently.

The present roads would then be good enough for all other users. The Government, now they have nationalised transport, should insist on this being done.—*J. M. Pike, in a letter to "Everybody's."*

100 YEARS AGO

From THE RAILWAY TIMES, April 28, 1849

WE cannot conceive any course more fully calculated to damage the cause of Chairmen and Directors lying under imprecation by Committees of Inquiry, or under the apprehension of their appointment, than the urgent and suppliant solicitation and canvassing for the proxies of shareholders. The meanness of this course is obvious—its corruption palpable. The applications are backed privately by every kind of insinuation against the motives of those who have originated the investigation; and although the reports and evidence are openly submitted to the shareholders, attempts both private and public are industriously made by Directors, their officials, and their friends, to misrepresent both the one and the other. The necessity of these investigations can only be made out *pro re nata*. We were at some pains to show, last week, that the practice of demanding Committees of Investigation is one to be tenderly and discreetly indulged in; partly on account of the difficulties which exist in every Railway Company—the edge of which time only can abate—and partly because there is an impending danger of deeply damaging the interests of holders by public expositions of the state of their corporate affairs.

PAINTING OF CANAL BOATS

The Docks & Inland Waterways Executive states that the use of the traditional designs of flowers and castles on canal boats is confined almost entirely to a proportion of the 3,200 boats which operate on the narrow canals. Of these the Executive owns only 380 and most of these were not decorated in the old style when taken over.

The Executive has no intention of suppressing a decorative art which brightens the entrances and interiors of cabins, or the gaily painted cans and buckets which are a feature of the long-distance canal boats, and there is no question of substituting numbers for the names borne by the craft. The use of the traditional designs has been declining for a number of years.

To keep as many boats as possible in service, it is necessary to reduce to the minimum the period of withdrawal from traffic for repainting, and as the craft come in for maintenance in the ordinary course, the new colours and the words "British Waterways" are substituted for the colours and names of the previous proprietors.

RAILWAYS PROBLEM

Time will show whether the [Railway] Executive can confound the prophets of woe who believe that the railways are doomed to a long commercial decline and who think that they should only be preserved for strategic reasons. But that the doubts can be expressed at all suggests another and far more fundamental question. Is the present centralised and bureaucratised organisation of the railways best adapted to dealing with the problem? Nationalisation has both removed the normal incentive towards increasing business and laid down that the railways must be run, not only as one unit, but as one part of the country's whole transport system. In this sense centralisation is inevitable and within limits desirable. But nationalisation, though it sets the limits within which action can be taken and brings with it obvious disadvantages, does not of itself make the problem insoluble. The question is whether the Executive can generate the drive to overcome the deadweight of the size of the unit that it has to administer and whether it will be able to decentralise initiative in such a way as to encourage its sub-units to seek the traffic that does not come of its own accord.—*From "The Financial Times."*

NAMING AND LIVERIES—A LOCOMOTIVE APPRECIATION

Platform 14,

York Station, March 8

My fellow-locomotives and I would like to say thank you to the Railway Executive for allowing us to retain our names.

There is no doubt that named engines are greatly responsible for the interest shown in railways by the younger element, and it is in the interest of fostering desire amongst this element ultimately to work on the railways, that locomotives should continue to be given names as hitherto. One of my young admirers once told me that it meant a great deal to him if *Great Northern* or *Silver Fox* was pulling a train such as the "Queen of Scots" Pullman, but if the engine had only a number, it was "just another one among thousands."

At the moment I am green—not with envy, I hasten to add—but soon I am to be painted blue. Whether light or dark I haven't been told, but one of my older Pacific colleagues (I forget his name for the moment) has been painted an experimental dark blue. On a dark, or wet, day he looks black, and it is difficult to distinguish him from one of these "Austerity" fellows. Different from the dashing blue streamliners—and on a night time, in dark stations or sidings, you would hardly know that he was there. Shunters say that it is rather dangerous, for generally a bright green fellow like myself can be seen easily in the dimmest of light. So they say.

I shall be sorry to see my little 0-6-0 friend, the shunting tank loco., painted black: he brightens up the station no end at the moment. Still, the coaches should look all right in the new colours, and the dark green chaps should look quite good with their orange lining. And the bright, individualistic appearances of the stations as they are being repainted in the Regional colour schemes makes it all very pleasant.

All the same, I hope that they paint me light blue, like my friend *Dominion of Canada* the last time I saw him. Then I can really live up to my name.—*From No. 60532, Blue Peter.*

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Financial Position

The operation of the railway, harbour, steamship, airways, and aerodrome services for the month of December, 1948, has resulted in a net surplus of £59,035. The total deficit for the period April to December, 1948, now stands at £1,862,436, as compared with £253,328 for the corresponding period in 1947.

Harbour operation for the month under review showed a surplus of £214,514, and all other services reflect a total deficit of £112,653. The difference of £42,466 represents the net revenue appropriation for the month.

The total revenue for the month was £7,859,435, and expenditure, excluding net revenue appropriations, amounted to £7,757,934.

Traffic Features

Substantial increases in the handling of cargo were recorded at the Union harbours during the year 1948.

The total of 12,282,956 tons handled, representing an increase of 2,399,396 over the figure for 1938, is made up as follows: tons landed, 7,458,558; tons shipped, 4,662,948; tons transhipped, 161,450.

The tonnage handled at Durban was 5,887,684, Cape Town 3,225,225, East London 1,770,109, and Port Elizabeth 960,542.

As a result of these increases, the railways are now required to move an average of 33,000 tons daily to and from the ports, much of which is carried over long distances between the ports and the larger inland centres.

In addition, goods traffic entering and leaving the Union annually through the port of Lourenço Marques is approaching the 4,000,000 ton mark, the majority of which has to be carried in Union rolling stock.

MALAYA

Combating Banditry

Since the wave of terrorism began in June, 1948, the army has been guarding trains and lines day and night, but its assistance would have been of little use but for the gallantry of the railwaymen. Failure on the part of drivers, firemen, signalmen, and permanent way men would have brought the train service to a standstill.

In six months since the proclamation of the emergency on June 16, 1948, the four main night mail trains alone covered some 200,000 miles without the loss of one passenger. Attempts have been made to blow up trains. The most serious incident was the derailling of a pilot train which involved a minor collision with the closely-following night mail, but without injury.

Up and down night mails between Kuala Lumpur, the capital, and Singapore; and Kuala Lumpur and Penang, all carry strong military and police guards, and are equipped with wireless for communicating with the State Police Headquarters. This special Army wireless unit of the Royal Corps of Signals was formed in the Middle East and rushed to Malaya.

Comprehensive orders have been worked out between the army and railway authorities to cover all possible even-

tualities. On all-night mail trains there is an officer detailed as O.C. Train, who is responsible for the defence of the train if attacked. All service personnel come under his command, but he exercises no command over railway staff or police guards except in the event of attack. Over civilian passengers he has no direct control, unless they act so as to endanger the safety of other passengers.

The keynote of the special orders laid down by H.Q. Malaya District is preparedness. Before trains start the O.C. Train is responsible that all armed personnel (all military personnel travelling by rail in Malaya are armed) charge their magazines and revolvers are loaded. If terrorists attack, the O.C. Train is responsible for the protection of everyone on the train, and for counter measures. The military guard is drawn from Seaforths, Guards, or Gurkha Brigade personnel. At varying localities and at different times, infantry patrols keep watch on the railways.

CANADA

The C.N.R. and Newfoundland

The Canadian National Railways, which had \$33,532,000 deficit in 1948, expects "substantial" losses in 1949 through taking over the Newfoundland Railway. Mr. R. C. Vaughan, Chairman, C.N.R., told the Canadian House of Commons Railway Committee that he had no figures immediately available to show what the losses will be, or to show what deficits the Newfoundland Railway has shown in the past.

Mr. Vaughan said the company had nothing to do with assuming operation of the island system. The company was not anxious to undertake any system which would show a loss. It did not propose to change the narrow-gauge equipment to standard gauge. The narrow-gauge stock could be serviced by Newfoundland shops and there would be no justification for a changeover.

Trend Towards Oil Burning

Mr. Vaughan said the C.N.R. was shifting more and more to the oil-burning engines as old equipment was replaced. The diesels were more economical in heavy work areas than steam locomotives because they required less attention between duties. Since new oil discoveries in Alberta, the C.N.R. was concentrating diesels in the west. A further 100 steam locomotives in the Edmonton area were being converted from coal to oil. However, the relative expense as between coal and oil depended on the price of these products at different points. The company was receiving more coal from the Maritimes for use in its Atlantic system, but western parts of the system still had to use coal imported from the United States. It was not economical for the company to bring Alberta coal farther east than Manitoba.

UNITED STATES

"California Zephyr" Service

A new daily passenger service each way between Chicago and San Francisco, known as the "California Zephyr," was inaugurated on March 20 jointly by the Chicago, Burlington & Quincy, Denver & Rio Grande Western, and Western

Pacific. The stock for the service consists of 66 new coaches, built by the Budd Company, to be operated in six trains.

Each train has a baggage car, three Vista-Dome coaches, a Vista-Dome buffet-lounge car, two six-bedroom and ten roomette cars, a dining car, one 16-section sleeper, one six-bedroom and ten-roomette car, and a Vista-Dome lounge-observation car, with one drawing room and three bedrooms.

The trains, diesel-hauled throughout, cover the 2,532 miles in 50 hr. 30 min. eastbound and 51 hr. 20 min. westbound, and the schedule has been timed to allow passengers to see the scenery of the Sierras and Rockies in daylight. The route is the newest railway crossing of the Rockies, the Western Pacific section having been completed in 1909. It increased in importance in 1934 when a cut-off was made west of Denver, placing that city on a through transcontinental route.

FRANCE

Electrification Progress

In spite of the lack of adequate credits, work on the electrification of the Paris—Lyons line is proceeding steadily. Railway and post office telephone wires have had to be displaced along the line to make way for the installation of catenary supports and obviate interference from traction current.

Work on sub-stations is also progressing; of a total of 27, 18 have been completed. All the high-tension material for the Paris—Dijon section has been ordered and the Tonnerre—Vielmoisin and Brunoy—Samoy sections are completed. Foundations for catenary supports have been laid along 344 km. of the 395 km. of the Paris—Dijon section; 123 km. have also been prepared between Dijon and Lyons.

Between Paris and Dijon, sub-stations will be installed about every 15 km., each comprising two 4,000-kW. transformers. Sub-stations will occur every 8 km. between Dijon and Lyons, each comprising a single 4,000-kW. transformer. All sub-stations will be controlled from three stations at Paris, Dijon, and Lyons.

Transformation or installation of automatic signalling has been going on as far as Dijon. Main tracks will be equipped with bronze catenary contacts and an auxiliary copper contact, fitted with an automatic regulating device. Along most of the line metal pylons will be used, but in other sections the use of pre-stressed reinforced concrete will economise in steel.

The Paris—Lyons line includes 173 bridges and 21 tunnels totalling 11,602 metres in length. Some of these have insufficient clearance for electric traction, and tracks in 20 tunnels are being lowered, and openings for 95 bridges enlarged. Eighteen bridges are being reconstructed.

As electric traction will enable heavier and longer trains to be run, tracks at depots, and platforms are having to be lengthened. Increase in speed limits is also necessitating realignment over 546 km. of track; 850 km. are yet to be renewed and curves totalling over 55 km. are to be realigned.

All the electric power required will be produced by the Genissiat hydro-electric plant. Consumption by the Paris—Dijon section, which will be in service by the end of 1950, will be 250 million kWh. The Dijon—Lyons section will be completed in 1952 and the whole of the line will use 400 million kWh.

Locomotive Cylinder Design—2*

Factors involved in the design of the cylinder, with special reference to live and exhaust steam passages, water cocks, relief valves, and materials

By George W. McArd, A.M.I.Mech.E.

AN unfortunate feature in all ordinary locomotive cylinders is the common passage for live and exhaust steam. The ideal would be separate channels for each, but this is not feasible with ordinary valves, and so that the exhaust steam may make a rapid exit before a quickly moving piston—and thus reduce the back pressure—these passages must be designed rather from the standpoint of a quick release for the exhaust steam, than from any consideration of the live-steam entry. Whatever provision is really satisfactory for the exhaust, also will be ample for the live steam, care being taken to avoid undue generosity in the proportions, otherwise the cylinder clearance volume percentage will become unduly high.

The total area necessary for the ports is related to the steam velocity, the piston area, and the piston speed. Thus the port-area times the steam-velocity should be equivalent to the product of the piston area and its speed. This is quite logical because, if the port area is too small, the cylinder will be starved of live steam, or the exhaust steam will be throttled in its escape and back pressure values go up in consequence.

Port-Area \times Steam-Velocity = Piston (Area \times Speed).

or Port-Area = Piston (Area \times Speed) / Steam-Velocity

or $A = (\pi D^2 S) / 4V$.

But S , the piston speed = $(2LN) / 12$

$$\therefore A = (2\pi D^2 LN) / 48V \\ = 0.1309 D^2 LN / V \quad \dots \dots (8)$$

If we assume diam.-speed, that is a speed in m.p.h. equal to the wheel dia. in in., the above becomes:—

$$A = 336 (0.1309 D^2 L) / V \\ = 43.98 D^2 L / V \quad \dots \dots (9)$$

One of the terms still remaining, the steam velocity, V , is somewhat difficult to define with any degree of certainty, but the following values, given by Mr. D. A. Low, frequently are used:—

Main steam pipes ...	5,000 to 8,000 ft. per min
Exhaust pipes, ports and passages ...	4,000 to 6,000 " "
Steam ports and passages ...	4,000 to 7,000 " "
Steam port opening ...	6,000 to 9,000 " "

As the port area considered in formulæ (8) and (9) is for exhaust steam, the maximum value of 6,000 ft. per min.—incidentally the minimum value for live steam—may be accepted as a safe figure to work to. For the area of port opening necessary for live-steam admission, the value of 7,500—the mean of Low's values for this purpose—may be used to calculate the port opening in readiness for the valve gear design. He also gives the following formulæ for the areas of steam and exhaust ports:—

$$\text{Area of steam port} = 0.07 \text{ to } 0.12, \text{ average } 0.09.$$

$$\text{Area of exhaust port} = 0.16 \text{ to } 0.23, \text{ average } 0.19.$$

The above values, which agree with many actual cases giving good service, are intended to apply to simple engines only, and the high-pressure cylinders of com-

pound locomotives. For the low-pressure cylinders of compound engines:—

$$\frac{\text{Area of steam port}}{\text{Area of piston}} = 0.056 \text{ to } 0.078, \text{ average } 0.064$$

$$\frac{\text{Area of exhaust port}}{\text{Area of piston}} = 0.079 \text{ to } 0.149, \text{ average } 0.114.$$

The port areas being settled, the process of determining the length and width of the rectangular opening in the port face for slide-valve cylinders is a simple one, always remembering to make the slight

is of such an area as will enable the exhaust steam to escape quickly enough to ensure reasonably low back-pressure, it does not follow that the actual exhaust port need be restricted to the same dimensions. Actually, this can be twice the area of the steam port, or twice the length of the steam port when measured longitudinally with the cylinder axis, and the path of the outflowing exhaust should be carefully graded immediately it escapes from the steamchest, right up to the blast pipe, where it commences to be artificially restricted to the most suitable area for producing the required smokebox vacuum. The point to be watched carefully, therefore, whether designing the exhaust branches in the cylinder, or the blast pipes and branches, is the changing sectional area from end to end; on no account should this be allowed to vary in an erratic

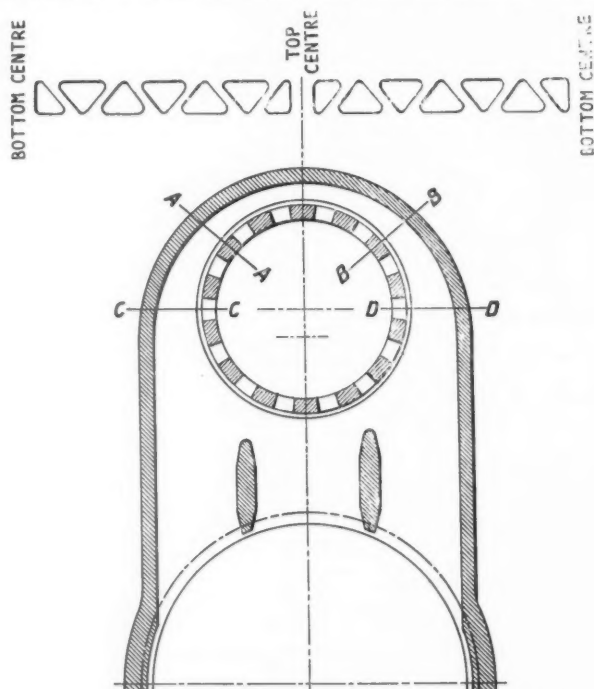


Fig. 5—Section through steam ports and passage in piston valve cylinder

allowance for corner radii. Before leaving this section, it may be observed that Pettigrew suggests that the steam port opening for slide-valve cylinders should be equal to 0.7 times the piston area, the length being from 0.5 to 0.8 of the cylinder dia.

For piston-valve engines the method is slightly more involved and is illustrated by reference to Fig. 5. The sectional areas of free passage way at AA and BB combined, should be not less than the total area through the four ports through which steam can flow. Likewise, the combined passage areas at CC and DD should be equal to the sum of the seven ports (six and two upper halves) within the half circle above the piston valve centre. In other words, if ports are provided, see that the steam flow is not restricted in its passage through these.

After the port and passage areas are tentatively decided on, a check should be made of the clearance volume, against the values already recommended. Although the port now settled is the steam inlet and

or haphazard manner, but should show a gradual enlargement on the cylinder up to the outlet from the cylinder casting, and from that point decrease gradually in area to the blast-pipe orifice, where a small but quick reduction brings it to the required outlet bore for obtaining the desired smokebox vacuum.

Steam and Exhaust Branches

For simple engines with inside cylinders and a single steamchest, the steam supply usually is arranged through a single lead from the tee pipe, or header, to the inlet on the steamchest, and serves to feed both cylinders; with outside cylinders a separate pipe connects each cylinder to the regulator outlet. In either case, the inlet bore is usually the same and a common figure is $D/4$ measured in inches. When fixing this dimension, a wise designer prefers to err on the generous side, as otherwise a good engine may be rendered less effective than it might have been.

The type of joint is settled in most

* Part 1 appeared in our issue of April 8

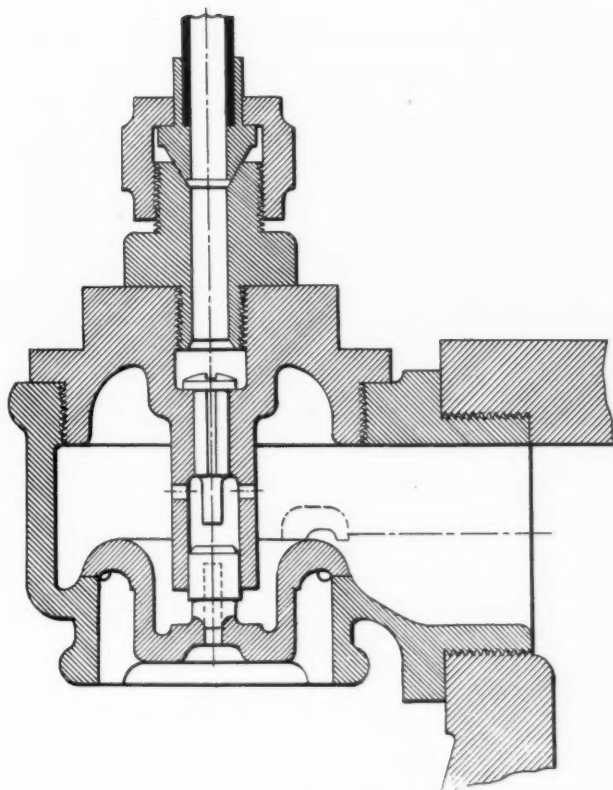


Fig. 6—Type of relief valve fitting on steamchests for non-superheated locomotives

designs by the railway C.M.E., but two types of joint are available, the flat joint and that in which a lens ring is used to make the seal. The latter allows greater flexibility to the pipe when under pressure—and therefore at comparatively high temperature—but has the demerit of providing two joints, which must be kept tight against one only when a flat flange joint is used.

The exhaust branches from the steamchest to the cylinder apron level, or wherever they terminate, already have been discussed, and the joints between these and the outside exhaust branches invariably are made by flat faces.

Water Cocks and Relief Valves

All cylinders, however well lagged, are subject to the cooling action of the surrounding atmosphere, and the resultant condensate naturally settles to the lowest point of the steamchest or barrel. At each end of the cylinder, therefore, a boss is provided to carry a drain cock, or valve, which serves to drain each side of the piston and a third fitting connected by a pipe line to the lowest point of the steamchest, is screwed into a blind-ended boss, in line with the first two cocks referred to. All are operated by rods and levers from the cab, being opened and shut at will by the driver; when opened during admission of steam to the cylinders, the water is forcibly ejected and the cylinder thoroughly drained.

In some designs, the opening and closing is effected by a servo-cylinder mounted beneath each cylinder and in the same line as the cocks to be worked; these servo-cylinders are steam controlled from a cock

in the cab, and are quicker in operation and appreciably less laborious than the hand operation previously referred to.

Two types of drain cocks are in regular use, the ordinary plug cocks, and the pattern in which a separate spring-controlled valve closes the outlet. The latter pattern is the easier to operate, but is liable to have its seating fouled by grit, the result being a valve which is continually blowing.

When the engine is coasting, or running with the regulator shut and the steam supply to the steamchests therefore cut off,

a vacuum is created at each end of the cylinder by every outward stroke of the piston, and this may have serious results unless proper steps are taken to cope with the position.

Throughout the stroke of the piston, first with the cylinder and steamchest connected by the open valve, and afterwards with the inlet port closed, the action of the reciprocating piston is that of a pump. The space behind the piston is reduced to such a state of vacuum, that air from the smokebox rushes in through the blastpipe to fill the void, immediately the valve opens to exhaust, and the incoming air is heavily charged with ash and coal grit destructive to the working surfaces of the cylinder, as well as detrimental to the efficiency of the lubrication.

To counter this result on non-superheated engine cylinders fitted with flat slide-valves, an ordinary relief valve as shown in the drawing, Fig. 6, is mounted. While steam fills the chest, the valve is held on its seat, but when the regulator closes, the valve is free to lift and admit clean air to the steamchest. This overcame the original difficulty, but at the same time introduced another, that of cooling the walls of the chest and causing a loss of heat whenever the regulator was closed. The valve illustrated in Fig. 6 has a small clack fitted which comes into operation every time the main valve lifts, releasing a small quantity of oil which is carried through on the stream of incoming air, in order to lubricate the working faces of cylinder and steamchest.

Superheated Locomotives

On superheated locomotives a better scheme is adopted, in which air is admitted through a snifting valve situated, usually, on top of the smokebox behind the chimney. The fitting is mounted on the superheater header and admits air to the saturated steam section, from which it passes to the steamchests via the elements, thus serving a dual purpose by eliminating any risk of a vacuum in the cylinder, and also any possibility of the superheater element bends being burnt. In some schemes a small jet of steam is admitted to the elements instead of air, the amount passing to the cylinders being insufficient to generate power behind the pistons, but ample to lubricate the working faces.

Yet a further difficulty arises with piston-valve cylinders in the event of water or

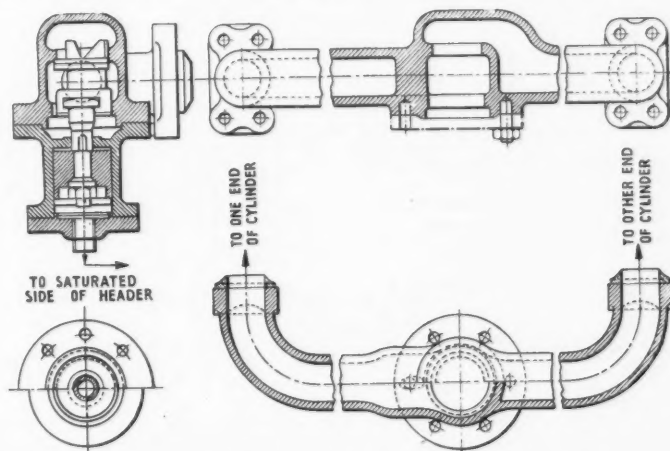


Fig. 7—Fowler-Anderson by-pass valve

excess pressure forming in the cylinder barrel. Where a flat slide-valve is in operation, any excess pressure in the cylinder is relieved instantly by forcing the valve off its seat, but such action is impossible with the piston valve, and special relief valves are combined with the water drain-cocks in many engines, to achieve the desired result.

Preventing Extreme Compression

On many engines, some form of by-pass valve is mounted on the cylinder, its particular function being to isolate the two sides of the piston while the regulator is open, but to connect these immediately steam is shut off. This prevents any possibility of extreme compression, or alternatively a vacuum, occurring at either side of the piston, and at the same time is of considerable assistance in reducing the internal resistance when the "dead" engine has to be moved.

The Fowler-Anderson by-pass valve and the Hendrie valve are illustrated, Figs. 7 and 8. The Fowler-Anderson by-pass valve is held closed by the action of a separate steam jet connected to the saturated steam side of the superheater header; when the regulator is opened the steam closes the valve and isolates the two ends of the cylinder. When the regulator is shut, pressure in the by-pass fails and the valve automatically opens.

In the case of the Hendrie fitting, when steam is admitted to the cylinder a small amount passes by way of the $\frac{1}{8}$ -in. hole shown in the valve body to the back of the valve and shuts down the connection between the steamchest and the cylinder port.

When the engine is coasting, however, immediately a vacuum is created in the steamchest, the valve opens and communication between both ends of the cylinder is established.

Materials

Although cylinders have been made in cast steel, difficulty always is experienced in obtaining sound castings, and as iron-foundries with experience in this class of work can produce castings with a low percentage of wasters, iron is almost invariably chosen for these parts. The standard specification of a leading firm of consulting engineers in this country calls for these castings to be made of close-grained, hard cast and strong cold-blast iron, twice cast, as hard as can be worked, and perfectly free from honeycomb and all other defects.

Testbars are to be provided on every cylinder, and must only be broken therefrom in their inspector's presence. Bars may be 14 in. long with a section of 2 in. \times 1 in.; they are to be capable of sustaining without fracture a load of 90 cwt., when placed on bearings 12 in. apart, with a minimum deflection of 0.06 in. or if of 1 in. square section, they must sustain unfractured a load of 30 cwt., on bearings 12 in. apart with a minimum deflection of 0.07 in.

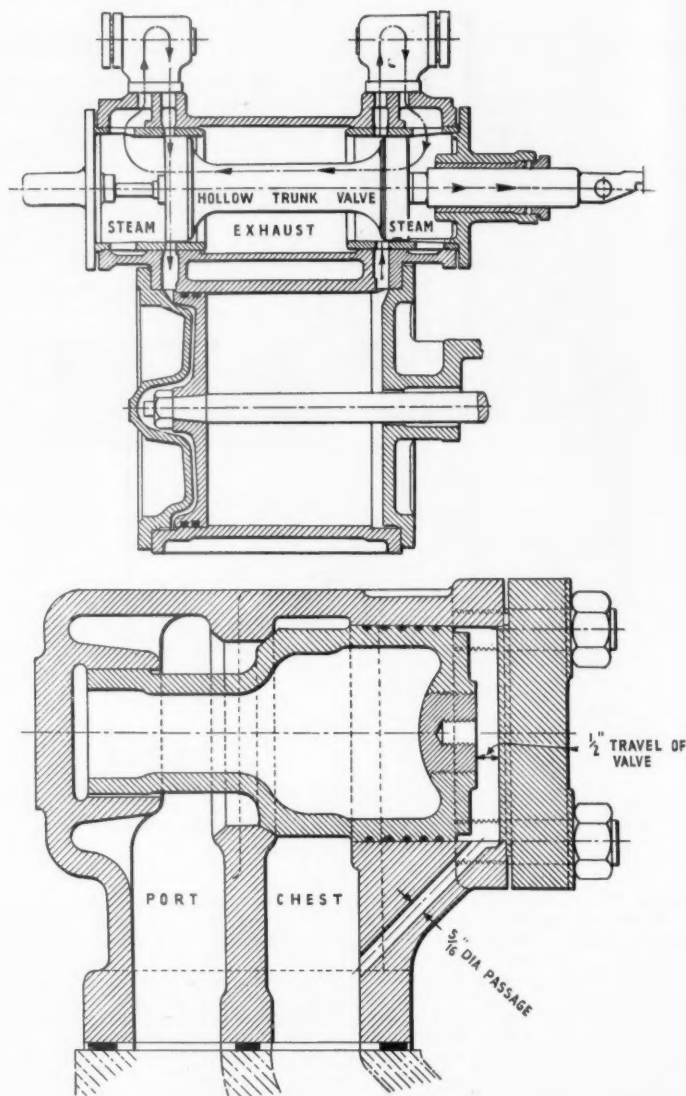


Fig. 8—Hendrie by-pass valve

High-pressure cylinders and valve chests are to be subjected to a prescribed hydraulic test pressure in the inspector's presence, and low-pressure cylinders and valve chests may be tested to 25 per cent. only above the maximum working boiler pressure.

No touching-up of defective castings by burning-in, fusing, plugging, or any other means is permitted except by the engineers' authority in writing.

A testplate is attached permanently to

each cylinder, giving the maker's consecutive number, the steam and hydraulic test pressures to which it was subjected, the date of test, and the inspector's stamp.

The steel frequently used for the "driving fit" bolts used to secure the cylinders to the frames has a tensile strength of from 32 to 36 tons per sq. in., a 25 per cent. elongation in 2 in. and a reduction in area varying from 35 to 40 per cent.

(Concluded)

THE TERRAPIN MOBILE DWELLING.—At a point on the Watford, Herts., by-pass last week, an aluminium container arrived by road and in two hours was transformed by six men into a four-room dwelling ready for occupation. This prototype mobile dwelling was constructed at the light alloy works of Richard Thomas & Baldwins Limited at Cwmfelin, South Wales, for Terrapin Dwellings Limited,

and will be on view at the Castle Bromwich, Birmingham, section of the British Industries Fair from May 2-13. The Terrapin mobile dwelling comprises a central or main body 22 ft. by 7 ft. 6 in. with two complete wing rooms, each 13 ft. 9 in. by 7 ft. The wing rooms are collapsible and the floor and wall units which form them are pivoted so that they may be folded into recesses in the

side walls of the main body when the house is in transit; the roofs of the wing rooms are retractable and are housed under the roof of the main body. Plumbing and electric wiring are incorporated with modern fittings. The dwelling has been designed to provide industry with an immediate means of housing workers comfortably and economically where traditional housing is not available.

Viaduct Cover-Plate Renewals under Traffic

Simple method used by the Erie Railroad engineers at Belfast viaduct, 3,120 ft. long



The Belfast viaduct has two 120-ft. and twenty-four 80-ft. spans alternating with 40-ft. tower spans

full-length, was added. The 120-ft. girders had four 8-in. \times 8-in. \times $\frac{1}{4}$ -in. angles and five $\frac{1}{2}$ -in. \times 18-in. cover-plates, one being full-length and spliced at two points. Here again, the angles were retained in place, and four of the old cover-plates were re-used, with the exposed corroded ends replaced by new lengths of plate butt-welded on; the fifth plate was replaced by a new one. In this instance, the additional plate fitted is full-length in sections and measures $\frac{1}{2}$ in. \times 18 in.

Work of Renewal

The renewal work started at one end of the viaduct and proceeded span by span across the structure. The guard- or check-rails for about three spans ahead were first removed, and, on the span of which the plates were being renewed, every third sleeper was taken out, to allow room for shifting the other sleepers as required by the work. All rivets then were cut out from the flanges and their connections with the cross-bracings. New gusset-plates for attaching the bracings were installed, and the rivets replaced by bolts, according to plan. The plan also allowed for fully bolting the flanges from the ends of the girders to the first intermediate stiffeners, and for a total of 300 bolts being used in each 80-ft. girder and 140 bolts in each 40-ft. girder, the bolts being, at most, in every third hole. Also, 50 per cent. of the bracing connection holes were bolted, with a minimum of three bolts per connection.

To facilitate their withdrawal the old cover-plates were tack-welded together, as were also the bracing gusset-plates to the flange angles, so as to hold the bracings in place when the bolts were removed to allow the cover-plates to be changed. The new cover-plates were spot-welded together in pairs.

After line occupation had been obtained, the sleepers were removed from a 10-ft. length at each end of the span and the track was jacked up 18 in. on to packings.

THE combination of ever-increasing loading and corrosion recently made imperative the renewal of all the top flange cover-plates of the girders in the 3,120-ft. long Belfast viaduct on the Erie Railroad. The bottom flanges were only slightly corroded, and there was no necessity to change them.

The viaduct consists of two 120-ft. spans, and 24 80-ft. spans, alternating with 24 40-ft. tower spans over the steel trestle piers. Every second 80ft. span is provided with expansion bearings. The piers are designed for carrying a double-line

main-girder cover-plates depended on a careful computation of the stresses in the top flanges of the girders, and the precise determination of the effects of impact on them. It was found that if speeds strictly were limited to 15 m.p.h., traffic could be passed safely over the viaduct with only a proportion of bolts in the top flanges, in place of full riveting, without subjecting the flanges to excessive unit stresses. This allowed renewal of the plates to be carried out *in situ* without intermediate support for the girders, or even the necessity for a crane, or a material train.



Left: A set of old corroded cover-plates being pulled out on to the deck of the viaduct. Right: Showing how the new cover-plates were pulled into position while the track was raised. Note the thickness of these as compared with the old corroded plates

superstructure, but, at present, the spans are only single-line; they are of the plate-girder deck type.

To avoid the removal of the spans, or, alternatively, the erection of costly false-work, it was decided to renew the cover-plates by another method. The opportunity was taken (1) to provide an additional top cover-plate for each girder, to increase its strength; (2) to reconstruct the side-walk; and (3) to renew the cover-plates of the box-type capping girders over the trestles.

The method adopted for changing the

The top flanges of the various types of main girder were as detailed below. Those of the 40-ft. spans consisted of two 6-in. \times 6-in. \times $\frac{1}{4}$ -in. angles, and a full-length cover-plate $\frac{1}{2}$ in. thick. The angles were left in place, but the cover-plate was replaced by a new similar one, and an additional full-length $\frac{1}{4}$ -in. \times 16-in. plate also was fitted. In the 80-ft. girders, similar angles were used, but there were three $\frac{1}{2}$ -in. \times 16-in. cover-plates, one of which was full-length. These three plates were replaced by three others, all full-length, and a fourth cover-plate, $\frac{1}{2}$ -in. \times 16-in., also

This allowed the old cover-plates, now unbolted, to be withdrawn longitudinally with the aid of a one-ton pneumatic hoist and tackle, and the new plates to be hauled in almost simultaneously to replace them, a second similar hoist being used for the purpose. The new plates, which previously had been drilled to template in the bridge and structures workshop, then were bolted into place to the same plan as the old ones had been, the sleepers were replaced, the track lowered and the traffic block removed. As the extra $\frac{1}{4}$ -in. cover-plate removed. As the extra $\frac{1}{4}$ -in. cover-plate removed.

(Continued on page 481)

Musical Broadcasts at Waterloo Station

Planning and organisation of a popular passenger amenity



FIRST introduced by the Southern Railway during the aerial assault on London in 1940, the musical broadcasts at Waterloo Station soon gained popular commendation as an antidote to wartime gloom. On a number of occasions the facilities have undergone modifications to bring them into line with widening experience, and in 1948 they were the subject of a fairly comprehensive survey designed to sound public opinion on the system's merits as a permanent facility.

A cross-section of suburban passengers was questioned by selected members of the railway staff, who were posted at various positions covering platforms 1 to 7. These men were stationed on both the concourse and platforms, and, so that passengers hurrying to work should not be troubled, it was decided that the census be conducted in the evenings only.

Certain difficulties that might have arisen from the interrogatory procedure were avoided by the use of a special sequence of questions. After the necessary introduction, passengers were asked if they listened to the broadcast of music and, if so, whether they liked or disliked the system. Though comment was not invited, over 95 per cent. of those interviewed volunteered to do so, and their remarks were recorded.

The census showed that of 737 passengers interviewed between 4.45 and 6.30 p.m. on selected Monday, Tuesday, and Wednesday evenings, 714 gave answers and only 23 were either uninterested or in too great a hurry. This widespread interest in the amenity also showed that 632 persons, predominantly regular passengers, were in favour of the music and only 67 against; the remainder were non-committal. The passengers interviewed, of ages ranging from 14 to the seventies, covered a very wide range of occupations, and there was no indication that the one in nine persons not in favour came from any particular age group or occupation.

Although several persons were critical of certain features of the system, the great majority was very favourably inclined to the broadcasts; most frequent suggestion was for lively marches in the morning, with more soothing music at evening time. A noteworthy comment was made by a passenger who thought that the sudden ces-

sation of music had the effect of alerting people standing about and, in his opinion, made them more attentive to any oral announcements that followed. A Rhodesian housewife said she had not heard the broadcasts before and liked the idea very much. Similar comment was made by an insurance broker from the United States, and a hotel worker even asserted that he occupied many an hour in listening to the broadcasts.

Added to experience, the details gathered from this census have proved of singular value and, by now, a considerable knowledge has been built up of the music most suited to station broadcasting, from both the technical and public viewpoints. As became apparent from the census, some personal tastes in this matter were directly opposed, but the majority had no complaint as to the music being relayed. Because of the possibility of confusion with train announcements, vocal records have been avoided and, furthermore, it has been found necessary to limit the range of instrumental works to those which require comparatively little tonal adjustment from the operator and are most generally suited to the surroundings.

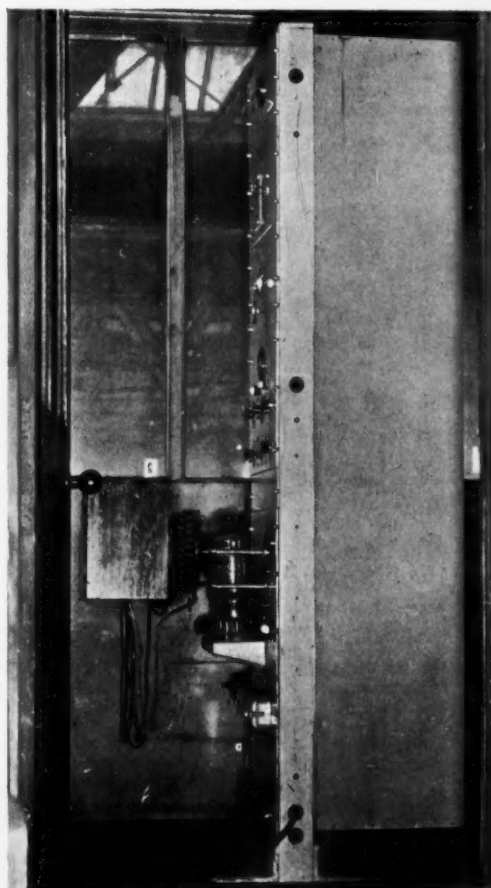
Catering for the casual listener found at the railway station naturally presents difficulties, as the person merely passing through does not have the opportunity of listening to more than short passages of the recording. Equally, due consideration must be accorded the passenger waiting for long-distance trains, particularly on

summer Saturdays when light, cheerful music is a definite aid in passing time.

Under these conditions, it was found impracticable to relay large-scale orchestral works such as concertos and symphonies, as, apart from their unsuitability, the considerable ranges in volume that they display involve a variety of technical problems. For similar reasons, "jive" and "swing" are excluded, though dance music and musical comedy have proved popular and, together with certain light compositions, provide the principal content of the present musical fare. Even tone and volume have proved to be two of the major factors in deciding a record's suitability.

Selection of records to cover the widest possible range of tastes within the limits stated, is an exacting task which has been apportioned to two lady members of the staff at Waterloo. Between these is divided the dual responsibility of choice from musical properties and from suitability to the relaying system. By arrangement with the His Masters Voice record company, the Southern Region is advised of new issues and those records selected, eventually are embodied in the series of readily-available sets kept at Waterloo, should breakage or wear render individual replacements necessary.

There are eleven permanent sets of general records, the composition of which is changed only for replacement purposes and run for some five weeks before it is necessary to return to any one set. Apart from sets of general records, the stock in-



Announcing and record-playing equipment

cludes five albums of marches for morning broadcasts and special Sunday programmes of 23 or 24 records. The marching and general sets are changed every Monday and Thursday and, dependent on the number of train announcements broadcast, do not involve a repeat in under 90 min. A typical general set is shown below:—

Title	Orchestra
"Roses from the South" ...	Regent Classic
"Dance Circassienne" ...	"
"Come Back to Sorrento" ...	Victor Silvester
"Heartaches" ...	"
"Valse Bleue" ...	Harry Davidson
"Esperano" ...	"
"Tales from the Vienna Woods" ...	Victor Silvester's Strings
"Wine, Women and Song" ...	"
"España" ...	"
"The Roast Beef of Old England" ...	Orchestra of the R.A.F.
"It's in the Air" ...	"
"Hasta la Vista" ...	Victor Silvester's String
"Waltz of the Violins" ...	"
"On the Trail to Spanish Bit" ...	Boston Promenade
"Prairie Sky" ...	"
"St. Bernard Waltz" ...	Harry Davidson
"The Arcadians" ...	"
"Ride of the Riff Pirates" ...	Louis Voss Grand
"Gay Life" ...	"
"Three Ballet Tunes" ...	Drury Lane Theatre
"The Leap Year Waltz" ...	"

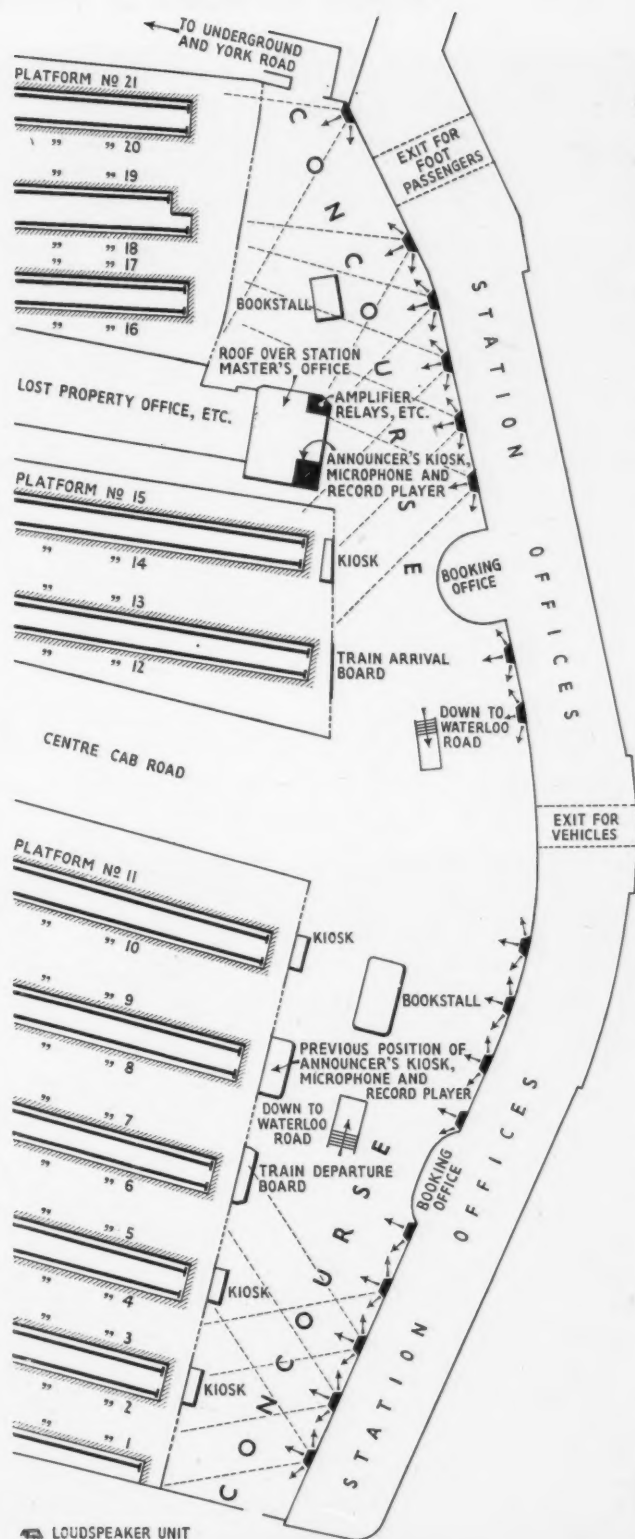
Since the musical broadcasts were introduced increased knowledge of requirements has brought various modifications to the hours of performance. Originally, weekday broadcasts were made between 4 and 7 p.m. only, with an extra programme between 12 and 3 p.m. on Saturdays. At present, the hours are as follow:—

Sunday ...	10 a.m. to 10 p.m.
Weekday ...	7-10.0 a.m. 4-10 p.m.
Saturday ...	7-10.0 a.m. 12-10 p.m.

Although at one time no music was broadcast on Sundays, the particular requirements of that day now are catered for in specially-selected recordings of light orchestral music, broadcast intermittent with train announcements throughout the day. One of these Sunday programmes is made up as follows:—

Title	Orchestra
"Valse Romantique" ...	New Concert
"Chelsea China" ...	"
"Sylvia Dances" ...	New Concert
"Les Sylphides" ...	"
"Summer Days" Suite ...	Light Symphony
"Ponteio" ...	New Concert
"Boulevardier" ...	"
"Three Light Pieces" ...	New Concert
"Liebesleid" ...	Andre Kostelanetz
"Liebesfreud" ...	"
"Demande et Response" ...	New Concert
"Cromer" ...	"
"The Butterfly" ...	New Concert
"In the Shadows" ...	"
"Evensong" ...	Peter Yorke
"Gentle Maiden" ...	"
"Gung' in the Ballroom" ...	New Concert
"Bird of Love Divine" ...	New Concert
"Pale Hands I Loved" ...	"
"Laughing Eyes" ...	Charles Ernesco
"Mystic Beauty" ...	"
"William Tell" Ballet Music ...	Sadler's Wells New Concert
"Caprice for Strings" ...	London Promenade
"Prunella" ...	"
"La Siesta" ...	Charles Ernesco
"Thanks for your Love" ...	"
"Miniature Suite" (Eric Coates) ...	New Concert
"Toytown Parade" ...	London Promenade
"Legend" ...	"
"Serenade from Hassan" ...	Jay Wilbur and His Strings
"The Holy Boy" ...	"
"Dusk" ...	"
"The Maid of the Mountains" ...	London Theatre
"In a Sentimental Mood" ...	New Concert
"Smoke Rings" ...	"
"Tchaikowsky Fantasia" ...	London Concert
"Bless This House" ...	New Concert
"Until" ...	"

Train announcements and records are
(Continued on page 481)



Layout of loudspeaker units and other installations for musical broadcasting at Waterloo Station

Musical Broadcasts at Waterloo Station



Announcer's box and kiosk housing broadcasting equipment, as now situated between platforms 15 and 16 at Waterloo Station



Earlier loudspeaker units and position of train announcer's box at Waterloo Station

Musical Broadcasts at Waterloo Station



Main concourse of the station from the southern end, showing the present loudspeaker units for train announcements and musical broadcasts

New Hydraulic-Lift Hand Truck

Weights up to 10 cwt. lifted 56 in. in one minute by 55 strokes of hand pump lever

A NEW version of the hydraulic-lift hand truck has been developed by Power Jacks Limited, Valetta Road, Acton, London, W.3, which firm originally produced this machine, the Newton Hydratruck, to meet the requirements of its own works. The purpose of the truck was to speed up and simplify the handling of press tools between stores and machine shops. Other jobs which had previously been done by hand, or with block and tackle, came

within its scope, and the truck in its present form will handle loads up to 10 cwt.

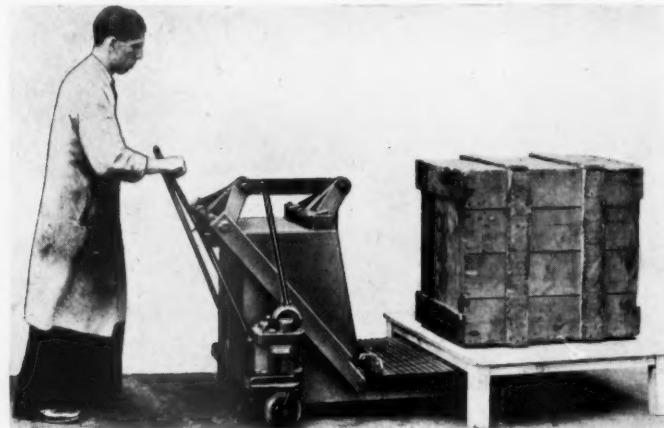
The platform can be raised to its maximum height of 4 ft. 8 in. in less than one minute and descends in about 20 sec. In the event of a failure of the hydraulic system a sudden drop of the platform is prevented by a control valve within the body of the lifting ram which regulates the descent to a safe speed.

Each Hydratruck is proof loaded to 12½ cwt. and guaranteed for six months. There is at present no official regulation calling for a certified overload for this type of truck, but a certificate of test is issued with each machine.

The lifting platform of the Hydratruck measures 30 in. by 30 in. and the overall length is 51 in. by 30 in. To raise the platform to its maximum height of 4 ft. 8 in., not more than 55 strokes of the hand-operated pump are required. The wheels and castors are equipped throughout with roller bearings and solid rubber or metal tyres, according to requirements. Braking is by means of fabric-lined disc brakes acting on the front wheels.



Truck with load in raised position



Truck manoeuvred under load on raised platform

Triple Accident near Paris



Wreckage of a suburban train, one of three trains involved in a recent accident at Le Bourget, Paris. An express from Hirson to Paris Nord was derailed and crashed into a bridge. One local train collided with the fallen masonry and another ran into the express. Two hundred passengers were injured, but only one killed, probably because of the metal construction of most of the coaches

RAILWAY NEWS SECTION

PERSONAL

The Midland Bank Limited announces that Sir Frederick C. Stewart (a Director of the Clydesdale Bank Limited) has been elected a member of its board and of the board of the Midland Bank Executor & Trustee Co. Ltd. Sir Frederick Stewart is Chairman of the North British Locomotive Co. Ltd.

Mr. R. W. Foxlee, C.B.E., M.I.C.E., who has been appointed Engineer-in-Chief to the Crown Agents for the Colonies, comes of an engineering family, being the elder son of the late Mr. W. T. Foxlee, M.I.C.E., at one time Engineer-in-Chief of the New South Wales Government Rail-

matters of policy, and for the general direction of the whole of the engineering activities of the Crown Agents' Office.

Mr. Norman Johnson, M.I.Loco.E., who, as recorded in our last week's issue, has been appointed Chief Engineer of the Pullman Car Co. Ltd., received his early training at the Swindon Works of the Great Western Railway. In 1914 he was awarded the first prize and silver medal of the City & Guilds Institute for railway carriage building. After serving with the B.E.F. in France from 1915-18 he returned to Swindon, but in 1920 was appointed an Assistant Carriage & Wagon Superintendent on the North Western Railway, India. After holding various ap-

British Railways, was born in 1884, and educated at St. Mark's College, Chelsea. He served for three years with the Surveyors to the Ecclesiastical Commissioners for England, before entering the Hotels Department of the London & North Western Railway in 1904. During his ten years in that department and in the position of Outdoor Assistant he gained much experience in the reorganisation of the hotels and catering in England, Wales, Ireland and Scotland. In 1914 he was appointed Hotels Manager, Great North of Scotland Railway, at Aberdeen. In 1918 he held a commission in the R.N.V.R., and was engaged in mine sweeping. In 1925 Mr. Ryan was appointed Hotels Manager, Southern Scottish Area, L.N.E.R., and in



Mr. R. W. Foxlee

Appointed Engineer-in-Chief, Crown Agents for the Colonies



Mr. Norman Johnson

Appointed Chief Engineer of the Pullman Car Co. Ltd.



Mr. A. A. Ryan

Hotels Superintendent, Southern Area, L.N.E.R., and Eastern Region, British Railways, 1945-49

ways and in his latter years in private practice in Westminster. Mr. R. W. Foxlee was born in 1885, and was educated at Westminster School. He commenced his engineering career as a pupil of the late Mr. Alexander Ross, then Chief Engineer, Great Northern Railway, and served in the New Works Department of that railway from 1906 to 1909, and in the Maintenance and New Works Departments of the Great Central Railway from 1909 to 1915. In 1915 Mr. Foxlee joined the engineering staff of the Port of London Authority, where he gained experience in dock construction and maintenance. He left the P.L.A. in 1921 to join the Crown Agents for the Colonies as Deputy Head of the Engineering Designs Department, and was appointed a Deputy Chief Engineer (Civil) in 1928, and Chief Civil Engineer in 1945. Mr. Foxlee, in his personal capacity, also advises the Secretary of State for the Colonies on matters of policy involving public works, railways, harbours and other subjects. Among his other activities he has always taken a great interest in bridge construction and permanent way. He was awarded the Trevithick Premium by the Institution of Civil Engineers in 1934 for his paper on "Hammer Blow Impact on Railway Bridges." In his present position as Engineer-in-Chief, he will be responsible for all important questions involving

pointments, he became Works Manager, Carriage & Wagon Shops, Moghalpura (Lahore). In 1932 he was transferred to the Burma Railways as Deputy Locomotive & Carriage Superintendent, and in 1937 became Locomotive, Carriage & Ferry Superintendent (later designated Chief Mechanical Engineer). With the Japanese occupation of Burma, Mr. Johnson, with other officers of the Burma Railways, reached India in May, 1942, after a difficult journey through unpopulated and largely unknown country. On arrival in Simla he was responsible for organising a nucleus headquarters of the Burma Railways; and he served as Railway Representative on the Transport & Communications Committee, set up by the Governor of Burma to plan the co-ordination of transport in Burma. In August, 1943, Mr. Johnson's services were lent to the Government of India Supply Department. In December, 1945, he returned to Burma to organise the rehabilitation of the Mechanical Department of the railways. He proceeded on leave preparatory to retirement in April, 1947, since when he has made a tour of the railways of South Africa and Southern Rhodesia.

Mr. A. A. Ryan, who, as recorded in our April 8 issue, is retiring shortly, on reaching the age limit, from the position of Hotels Superintendent, Eastern Region,

1936 he became Hotels Superintendent, North Eastern Area. He was appointed Hotels Superintendent, Southern Area, in 1945, and he has continued in that position for the Eastern Region of British Railways, since January 1, 1948.

We regret to record the death, while on holiday in Bariloche, Argentina, of Mr. John Cook, Chief Mechanical Engineer of the General Urquiza Railway (former Entre Rios and Argentine North Eastern Railways). A portrait and biography of Mr. Cook appeared in our April 9, 1948, issue.

Mr. R. C. Plowman, Executive Director of the British Thomson-Houston Export Co. Ltd., has retired, after 30 years service with B.T.H., all in connection with overseas trade. Mr. E. V. Small, previously Director & General Manager of the company, has been appointed Managing Director, and, to fill the vacancy caused by the retirement of Mr. Plowman, Mr. J. N. MacDonald, Manager of the London Office of the B.T.H. Export Company, has been appointed to the board as Executive Director. The administration of all overseas representation, previously carried out by Mr. Plowman, is being undertaken by Mr. C. W. Peyton, who has been appointed Manager, Overseas Representatives & Agencies.



Mr. D. S. M. Barrie

**British Railways Public
Relations & Publicity
Officers**

*(See biographies on
opposite page)*



Mr. G. Wynne Davies



Mr. C. Grasemann



Major M. J. M. Dewar



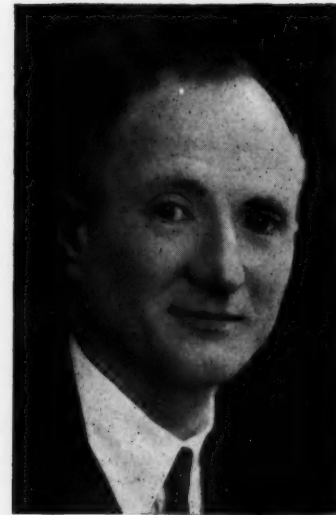
Mr. George Dow



Mr. M. B. Thomas



Mr. S. W. Jesper



Mr. H. M. Hunter

Mr. D. S. M. Barrie, M.B.E., who is Public Relations Officer to the Railway Executive, was born in 1907 at Newport, Monmouthshire, and was educated at Tonbridge School. After eight years' experience of all branches of editorial work with the *Daily Graphic* and with Allied (now Kemsley) Newspapers, he joined the Advertising & Publicity staff of the L.M.S.R. in 1932, and took a prominent part in the development of staff newspapers by that company. During the recent war he served with the Royal Engineers (Movement Control Section), latterly with the temporary rank of Lt-Colonel; for services in North West Europe he was made an M.B.E. (Military Division) in 1946, and was also awarded the United States Bronze Star Medal for services in connection with the movement of American Forces through the port of Southampton. On returning to railway service he became Assistant (Press & Publicity) to the L.M.S.R. Advertising & Publicity Officer in 1946. When the railways were nationalised he became Assistant Advertising & Publicity Officer, London Midland Region, and he relinquished that post on his appointment as Public Relations Officer, Railway Executive, in July, 1948, which position he still holds.

Mr. G. Wynne Davies, O.B.E., M.A., M.Inst.T., who is Publicity Officer to the Railway Executive, was educated at Repington and Clare College, Cambridge. He joined the Southern Railway in 1926, and in 1928 was selected as one of the first of its cadets. After four years training in all departments he was appointed Assistant to the Road Transport Liaison Officer in 1932. In 1935 he became Assistant to the London (East) Divisional Superintendent; in 1938 was appointed General Purposes Officer to the General Manager; and in 1939 went to the Secretary's Office, where he was subsequently appointed Assistant Secretary to the company. Mr. Wynne Davies had held a commission in the Royal Engineers (Supplementary Reserve) before the war, and on September 4, 1939, he proceeded to France with G.H.Q., B.E.F. Subsequently he served on the staff of G.H.Q. Home Forces, A.F.H.Q., and H.Q. Eighth Army in North Africa and Italy, during which time he was mentioned in dispatches four times and made an O.B.E. (Military Division). He left the Army in September, 1945, with the rank of Colonel. On his return to the Southern Railway he became Assistant Public Relations & Advertising Officer, until he assumed the responsibilities of the Public Relations & Advertising Officer, Southern Region, British Railways.

Mr. C. Grasemann, M.A., who becomes Public Relations & Publicity Officer, Southern Region, British Railways, under the new organisation, is the son of the late Mr. C. E. Grasemann, a former Chief Goods Manager of the London & North Western Railway. He was educated at Rugby and Trinity College, Cambridge, and then joined the staff of Bull, Austin & Company, an advertising and printing business dealing largely with transport printing. In 1912 he entered the service of the South Eastern & Chatham Railway, and became an Assistant District Superintendent in May, 1914. During the 1914-18 war he served for over four years in France in the Railway Operating Division (R.E.), and was demobilised with the rank of Captain. In 1930 Mr. Grasemann was appointed Public Relations & Advertising

Officer to the Southern Railway. He was eight times Chairman of the Railway Clearing House Public Relations & Advertising Committee previous to nationalisation. He received the French Legion of Honour for his services to tourism between the two countries, and was made Chevalier dans l'Ordre de la Couronne for his services as Chairman for many years of the Joint Publicity Committee of Belgian and British interests. On the nationalisation of the British railways he was lent to the Railway Executive, under Field-Marshal Sir William Slim, to assist in forming a Public Relations Department.

Major M. J. M. Dewar, O.B.E., who becomes Public Relations & Publicity Officer, Western Region, British Railways, under the new organisation, joined the Great Western Railway as Trade Advertising Agent in 1933. A year later he was appointed Publicity Officer, a position which he held until the new organisation commenced on April 4, 1949. Major Dewar, who was educated at the Oratory School, was gazetted to the Royal Sussex Regiment in 1910, and served in France from 1914 to 1916, when he was seriously wounded. On recovery he was for four years on the General Staff at the War Office, and was invalided from the Army as a Major in 1921. In 1924 and 1925 he was in charge of a department at the British Empire Exhibition at Wembley, and, from 1926 to 1933, was head of the Outdoor Publicity Section of the Empire Marketing Board. He was recalled from the Regular Army Reserve of Officers in the early days of the recent war, and was transferred from his regiment to the Royal Engineers, with which he served for four years, mainly at the R.E. Depot, until, in December, 1943, he was invalided, and rejoined the G.W.R.

Mr. George Dow, A.M.Inst.T., who has been appointed Public Relations & Publicity Officer, London Midland Region, British Railways, was educated at Watford Grammar School and Brighton College, and joined the L.N.E.R. as a junior clerk in 1927. After five years experience in the Works & General and Press Sections of the Chief General Manager's Office, he was appointed District Agent in the Commercial Advertising Department. In 1937 he was attached to the Advertising Department's headquarters for special duties in connection with design and layout matters arising out of the numerous station improvements then being initiated throughout the L.N.E.R. system. In 1939 he was appointed Information Agent, and he was redesignated Press Relations Officer five years later. On the nationalisation of the railways he became Press Relations Officer, Eastern & North Eastern Regions, the post he now vacates for his new appointment. During most of his railway career Mr. Dow has made a close study of public relations work and matters connected with industrial design. He was railway correspondent for the erstwhile publication "Design for Today," and his diagrammatic maps were adopted by the L.N.E.R. and L.M.S.R. for carriages, posters and timetables. He has written several historical railway booklets, and was the anonymous author of the railways' wartime publication, "It Can Now be Revealed." He is a Member of the Institute of Public Relations, and has been President of the Model Engineering Trade Association since its inception in 1944.

Mr. M. B. Thomas, who has been appointed Public Relations & Publicity Officer, Eastern Region, British Railways,

was educated at Christ's Hospital, and in 1924 joined the L.N.E.R. as a traffic apprentice. After a three-year training in Scotland, and a further period at headquarters in London, he occupied successively posts in the commercial departments at York, Newcastle, Nottingham and London. During the recent war he served in France, North Africa and Italy with the Royal Engineers and on the staff. In 1946 Mr. Thomas was appointed Assistant Advertising Manager, L.N.E.R., and in 1948 Acting Advertising Manager, Eastern & North Eastern Regions, British Railways.

Mr. S. W. Jesper, who has been appointed Public Relations & Publicity Officer, North Eastern Region, British Railways, was born at York, and received his first education there, and later at Epsom College. He comes of a well-known York railway family—his father, Mr. Charles Jesper, was Chief Goods Manager of the North Eastern Railway in 1900, and he has two brothers in the service of British Railways. Mr. S. W. Jesper's railway career started in 1920, after demobilisation from war service, as probationary clerk at Cattel on the N.E.R.. In 1929 he was transferred to the Divisional General Manager's Office, York, L.N.E.R., with special responsibility to the Editor of the staff magazine. In 1933 Mr. Jesper was promoted to the Canvassing Department under the District Goods Manager, Leeds, and in 1936 was appointed District Canvasser, Scarborough, followed in 1939 by his appointment as Chief Canvasser at Peterborough. He remained there until 1941, when he was transferred to the Chief General Manager's wartime headquarters to a post in the Press Relations Office, L.N.E.R. In 1946 he was appointed to a position in the Advertising Manager's Department at Marylebone, where he has remained until receiving his present appointment at York.

Mr. H. M. Hunter, A.M.Inst.T., who becomes Public Relations & Publicity Officer, Scottish Region, British Railways, under the new organisation, joined the Glasgow & South Western Railway as a junior clerk in the Goods Manager's Office, Glasgow, in 1916. Subsequent to the amalgamation in 1923 he held positions at various L.M.S.R. stations, and in sections of the Commercial Manager's Department. In 1939 he was appointed Personal Clerk to the Commercial Manager, and in 1945 was placed in charge of press publicity. He became Chief of the Advertising & Publicity Section, Commercial Manager's Office, in 1947, and was appointed Public Relations Officer, Scottish Region, on January 1, 1948.

Lt-Colonel Harold Rudgard, President of the Institution of Locomotive Engineers, recently gave a private luncheon at St. James's Court, London, S.W.1. to Mrs. Lawford Fry, widow of Mr. Lawford Fry, who was Director of Research, Steam Locomotive Research Institute, New York City, from 1943 until his retirement, only a few days before he passed away, last July. The others who attended were:—

Sir William Stanier, sometime Chief Mechanical Engineer, L.M.S.R.; Mr. O. V. Bulleid, Chief Mechanical Engineer, Southern Region, British Railways; Mr. R. C. Bond, Chief Officer (Locomotive Construction & Maintenance), Railway Executive; Mr. W. A. Agnew, sometime Chief Mechanical Engineer (Railways), L.P.T.B.; Mr. W. G. Hornett, Sentinel (Shrewsbury) Limited; Major H. A. Harrison, Secretary, Institution of Locomotive Engineers.

British Transport Commission Statistics

Summary of the principal statistics for
the four-week period ended February 27

Number 2 of the 1949 series of *Transport Statistics** shows that the trend of events in February differed little from the general run of development in January. There was a further decrease of 5,036 in the number of the Commission's employees, making a total reduction in staff this year of 10,283. British Railways employed 6,039 fewer persons, but may have transferred some of their staff to the Docks Executive, as an increase of 878 appears under the heading "Steamships, Marine & Docks." London Transport engaged 206 more people.

In the month of January, passenger

journeys originating on British Railways decreased by 1 per cent., but the corresponding takings were down 8.5 per cent. Only 23 per cent. of the passengers paid ordinary or monthly return fares; in 1948 the proportion was 30 per cent. Evidently many passengers were content to take

excursion, weekend, or other cheap tickets, and more season ticket journeys were made at the low average fare of 9d.

February brought a healthy increase in freight tonnage, but not quite a proportionate advance in ton miles, indicating a slight decline in length of haul. The improvement of 1 per cent. in merchandise carryings would have been gratifying if it had produced higher receipts instead of 4 per cent. less revenue. The Eastern Region was alone in having a drop of 62,000 tons in merchandise, but originated 71,000 more

STAFF

	Commission's Head Office	British Railways	London Transport	Road Transport (Freight)	Hotels & Catering	Steam- ships, Marine & Docks	Inland Water- ways	Railway Clearing House	Total
No. of employees	165	637,906	100,939	24,991	15,912	25,103	5,202	701	810,919
Inc. or dec.	+3	-6,039	+206	-6	-86	+878	+9	-1	-5,036

* British Transport Commission Statistics, 1949.
Series No. 2. Period to February 27. London:
British Transport Commission. Price 1s.

1. BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS

	Four weeks to February 27		Inc. or dec.	Aggregate to February 27		Inc. or dec.
	1949	1948		1949	1948	
	£000	£000		£000	£000	
British Railways—						
Passengers ...	6,610	7,228	- 618	13,175	14,852	- 1,677
Parcels, etc., by passenger train ...	2,102	2,210	- 108	4,067	4,229	- 162
Merchandise ...	6,691	7,025	- 334	13,002	13,724	- 722
Minerals ...	2,400	2,231	+ 169	4,778	4,347	+ 431
Coal & coke ...	5,457	5,237	+ 220	10,710	10,321	+ 389
Livestock ...	102	73	- 29	198	148	- 50
	23,362	24,004	- 642	45,930	47,621	- 1,691
Steamships ...	480	457	+ 23	989	936	+ 53
London Transport—						
Railways ...	1,096	1,108	- 12	2,225	2,248	- 23
Buses & coaches ...	2,268	2,269	- 1	4,521	4,558	- 37
Trams & trolleybuses ...	813	831	- 18	1,623	1,671	- 48
	4,177	4,208	- 31	8,369	8,477	- 108
Road Transport (Freight)—						
Freight charges, etc. ...	1,378	—	—	2,696	—	—
Inland Waterways ...	157	135	+ 22	312	268	+ 44
Hotels & Catering ...	912	929	- 17	1,844	1,879	- 35
Total ...	30,466	29,733	+ 733	60,140	59,181	+ 959

tons of minerals and 284,000 tons of coal & coke. The Western Region also did well in minerals with an increase of 97,000 tons, or nearly 16 per cent. The average train load for all Regions was 160 tons, and it moved at the slow speed of 7.87 m.p.h.

The quantity of locomotive coal consumed was 1,139,000 tons, the highest amount for any four-week period since nationalisation. At 66.55 lb. consumption per engine mile was down slightly on 1948, but was higher than in the previous period. The Western Region had noticeably large increases, both in the quantity of coal used and in the amount burned on an average engine mile.

Inland Waterways report increases in traffic and in ton miles, chiefly in the North Eastern and South Eastern Divisions. London Transport, on the other hand, again recorded a decrease in passenger journeys of 203,000 compared with 1948, though nearly 3 per cent. additional car miles were run. As a result the loss of £23,000 in passenger takings was rather a serious matter.

It would seem that fewer people are travelling from the suburbs of London for shopping, or for pleasure.

2. BRITISH RAILWAYS

(A) Passenger Journeys Originating in the Month of January

	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Ordinary fares ...	1,339,000 (-10.26)	655,000 (-14.70)	1,900,000 (-2.74)	712,000 (-0.13)	150,000 (-16.69)	302,000 (-24.51)	5,058,000 (-8.14)
Monthly return ...	5,189,000 (-21.83)	1,298,000 (-40.68)	6,269,000 (-20.97)	1,485,000 (-19.01)	332,000 (-49.52)	772,000 (-48.20)	15,345,000 (-26.01)
Excursion, weekend, cheap day, etc. ...	2,365,000 (+271.82)	1,433,000 (+288.22)	2,879,000 (+257.61)	685,000 (+289.65)	564,000 (+271.94)	788,000 (+350.92)	8,714,000 (+276.83)
Workmen ...	7,624,000 (-0.19)	1,807,000 (-12.36)	6,516,000 (+0.35)	1,767,000 (-5.07)	936,000 (-7.53)	888,000 (-11.94)	19,538,000 (-2.68)
Other descriptions ...	1,154,000 (-20.42)	726,000 (-22.56)	1,283,000 (-22.27)	538,000 (-23.28)	266,000 (-31.46)	322,000 (-24.22)	4,289,000 (-22.75)
Season tickets ...	8,134,000 (+2.25)	3,734,000 (-8.96)	17,191,000 (+5.93)	3,189,000 (+4.14)	939,000 (-7.95)	2,037,000 (-19.71)	35,224,000 (+0.92)
Total ...	25,805,000 (-0.02)	9,653,000 (-7.42)	36,038,000 (+2.78)	8,376,000 (+0.35)	3,187,000 (-6.52)	5,109,000 (-15.34)	88,168,000 (-1.04)

(B) Freight Tonnage Originating

	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Merchandise ...	1,446,000 (+0.51)	831,000 (+4.07)	283,000 (+3.25)	589,000 (-9.59)	631,000 (+0.03)	690,000 (+10.15)	4,470,000 (+1.13)
Minerals ...	1,693,000 (+6.36)	708,000 (+15.86)	115,000 (-8.24)	756,000 (+10.24)	857,000 (+5.48)	617,000 (+9.12)	4,746,000 (+8.07)
Coal & coke ...	4,339,000 (+9.77)	2,113,000 (+9.28)	298,000 (+3.15)	2,270,000 (+14.30)	2,513,000 (+4.69)	1,668,000 (+0.23)	13,201,000 (+7.98)
Livestock ...	13,000 (+22.55)	9,000 (+6.10)	2,000 (+46.15)	5,000 (-15.09)	5,000 (+27.03)	18,000 (+9.36)	52,000 (+11.35)
Total ...	7,491,000 (+7.11)	3,661,000 (+9.23)	698,000 (+1.20)	3,620,000 (+8.75)	4,006,000 (+4.11)	2,993,000 (+4.20)	22,469,000 (+6.57)

	Region						Total							
	London	Midland	Western	Southern	Eastern	North Eastern	Scottish							
Merchandise & livestock ...	203,043,000	Per cent. (+ 2.01)	108,817,000	Per cent. (+ 0.21)	26,141,000	Per cent. (+ 1.65)	84,171,000	Per cent. (- 2.07)	57,125,000	Per cent. (+ 7.70)	91,459,000	Per cent. (- 1.50)	570,756,000	Per cent. (+ 0.99)
Minerals ...	136,786,000	(+ 6.29)	79,227,000	(+ 26.99)	15,042,000	(+ 11.08)	91,118,000	(- 0.16)	37,077,000	(+ 11.50)	40,168,000	(- 3.90)	399,418,000	(+ 7.68)
Coal & coke ...	313,027,000	(+ 9.74)	144,454,000	(+ 12.17)	27,353,000	(+ 4.47)	181,982,000	(+ 13.10)	73,230,000	(+ 11.40)	69,811,000	(- 3.55)	809,857,000	(+ 9.56)
Total ...	652,856,000	(+ 6.51)	332,498,000	(+ 10.92)	68,536,000	(+ 4.73)	357,271,000	(+ 5.66)	167,432,000	(+ 10.13)	201,438,000	(- 2.70)	1,780,031,000	(+ 6.25)

	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
<i>Coaching train miles—</i>	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Steam—							
Loaded	4,157,000 (+7·34)	2,952,000 (+12·89)	1,457,000 (+9·91)	2,357,000 (+3·28)	972,000 (+3·87)	1,732,000 (+1·31)	13,627,000 (+6·96)
Empty	122,000 (+8·23)	123,000 (+5·61)	39,000 (+5·22)	79,000 (—7·44)	39,000 (+11·32)	49,000 (—13·42)	451,000 (+1·75)
Total loaded & empty ...	4,279,000 (+7·36)	3,075,000 (+12·58)	1,496,000 (+9·78)	2,436,000 (+2·90)	1,011,000 (+4·14)	1,781,000 (+0·84)	14,078,000 (+6·78)
Electric—							
Loaded	427,000 (+9·50)	—	2,947,000 (+13·08)	22,000 (—58·96)	92,000 (+6·09)	—	3,488,000 (+11·24)
Empty	18,000 (—8·86)	—	61,000 (+7·93)	2,000 (—4·06)	10,000 (—10·61)	—	91,000 (+1·59)
Total loaded & empty ...	445,000 (+8·61)	—	3,008,000 (+12·97)	24,000 (—56·71)	102,000 (+4·20)	—	3,579,000 (+10·97)
<i>Freight train miles—</i>							
Loaded	3,131,000 (+3·31)	1,800,000 (+9·88)	535,000 (—1·87)	1,707,000 (+3·54)	981,000 (+7·05)	1,435,000 (—3·51)	9,589,000 (+3·48)
Empty	566,000 (+7·10)	209,000 (+0·21)	15,000 (+30·29)	360,000 (+11·49)	218,000 (+19·53)	200,000 (—2·84)	1,568,000 (+7·43)
Total loaded & empty ...	3,697,000 (+3·87)	2,009,000 (+8·79)	550,000 (—1·18)	2,067,000 (+4·84)	1,199,000 (+9·12)	1,635,000 (—3·43)	11,157,000 (+4·02)
<i>Total coaching and freight train miles—</i>							
Loaded	7,715,000 (+5·77)	4,752,000 (+11·70)	4,939,000 (+10·07)	4,086,000 (+2·58)	2,045,000 (+5·46)	3,167,000 (—0·90)	26,704,000 (+6·24)
Empty	706,000 (+6·80)	332,000 (+2·15)	115,000 (+10·57)	441,000 (+7·29)	267,000 (+16·59)	249,000 (—5·32)	2,110,000 (+5·87)
Total loaded & empty ...	8,421,000 (+5·86)	5,084,000 (+11·05)	5,054,000 (+10·30)	4,527,000 (+3·03)	2,312,000 (+6·67)	3,416,000 (—1·25)	28,814,000 (+6·19)

Region											Total		
London Midland		Western		Southern		Eastern		North Eastern		Scottish			
1949 6.54	1948 6.75	1949 9.04	1948 8.73	1949 8.68	1948 8.73	1949 7.82	1948 7.59	1949 9.43	1948 9.18	1949 9.38	1948 9.29	1949 7.87	1948 7.86

		Region						Total
		London Midland	Western	Southern	Eastern	North Eastern	Scottish	
Tonnage consumed	...	382,000 (+2.54)	192,000 (+13.96)	79,000 (+10.71)	203,000 (-4.15)	100,000 (+6.55)	183,000 (-2.48)	1,139,000 (+3.02)
Lb. per engine mile	...	68.97 (-1.93)	56.36 (+4.18)	58.59 (+6.72)	68.47 (-4.90)	66.82 (+1.98)	77.64 (-0.41)	66.55 (-0.72)

	Operating position	Number under repair	Serviceable stock	Serviceable stock in 1948
Locomotives	20,171	3,591	16,015	16,163
Coaching vehicles	55,582	5,962	49,620	48,406
Freight wagons	1,172,266	106,501	1,065,765	1,068,153

—	Tonnage	Per cent.	Ton-miles	Per cent.
General merchandise ...	320,000	(+11·94)	5,794,000	(+12·99)
Liquids in bulk ...	151,000	(+12·30)	3,224,000	(+22·76)
Coal, coke, patent fuel & peat	459,000	(+11·26)	6,524,000	(+9·53)
Total ...	930,000	(+11·66)	15,542,000	(+13·36)

	Number	Per cent.
Railways	49,489,000	(-1.81)
Buses & coaches	203,724,000	(+1.05)
Trams & trolleybuses	98,064,000	(-1.56)
Total	342,277,000	(-0.06)

	Miles	Per cent.
Railways	18,109,000	(+4.67)
Buses & coaches	24,210,000	(+2.86)
Trams & trolleybuses	8,661,000	(-0.39)
Total	50,980,000	(+2.92)

British Railways' Summer Train Service Plans

British Railways' 1949 summer train services will come into operation on May 23, and will operate until September 25—a week longer than last year.

Sir Eustace Missenden, Chairman of the Railway Executive, on April 21 stated that there would be available 1,350 additional new carriages and 167 new passenger-type locomotives, as compared with a year ago.

The highlights of the 1949 summer train services, and comparisons with a year ago are:—

Weekly Passenger Train Mileage

	Summer, 1948	Summer, 1949	Increase over 1948
Miles per week	4,116,835	4,417,266	300,431

Numbers of additional trains, summer, 1949, compared with summer, 1948:—

	Additional trains
Saturdays excepted	183
Saturdays only	349
Sundays	78

RESERVED SEATS

The number of trains on which it will be possible to reserve seats in advance is again being increased, especially on Saturdays:—

	Summer, 1948	Summer, 1949	Increase
Saturdays excepted	211	509	298
Saturdays only	127	591	464
Sundays	46	225	179

The total number of sleeping car services per week will be increased by 15 (392 this summer compared with 377 last year).

Restaurant and buffet cars are to be increased in conjunction with the Hotels Executive, to the limit of resources, as shown below:—

	Summer, 1948	Summer, 1949	Increase
Day	Restaurant cars	Buffet cars	
Saturdays excepted	464	103	
Saturdays only	505	98	
Sundays	186	18	

MORE CROSS-COUNTRY EXPRESSES

More direct through trains between the industrial centres of the North of England and Midlands and the South and South West Coasts are to be run. These services, some of which will have restaurant or buffet car facilities, will enable holiday-makers to avoid the expense and trouble of crossing London. The trains will be additional to others which run either all-the-year-round, or seasonally, and which are being continued this summer. Examples of the additional services, some of which will run at week-ends only, include:—

Newcastle, York, Sheffield—Bournemouth (each weekday);
Newcastle, York, Sheffield—Torquay and Paignton (outwards Fridays and Saturdays, returning Saturdays and Sundays);
Newcastle, York, Sheffield—Penzance (Fridays only);
York, Sheffield, Nottingham—Cardiff and Swansea (each weekday);
Bradford, Leeds, Sheffield—Torquay and Kingswear (each weekday);
Sheffield, Nottingham, Leicester—Margate and Ramsgate (outward Friday nights, returning Saturdays);
Leicester, Northampton—Brighton, Eastbourne and Hastings (Saturdays only);
Wolverhampton, Birmingham—Portsmouth Harbour for Isle of Wight (each weekday);
Birmingham—Portsmouth Harbour for Isle of Wight (each weekday);
Coventry—Brighton, Eastbourne and Hastings (Fridays and Saturdays only).

In connection with certain of these services, advance booking of seats will be available at the starting points.

As an attraction to those living in outer suburban areas, several long-distance expresses to the West of England and South Wales will start from Ealing Broadway on Friday nights and on Saturday mornings. Similarly, expresses for the Kent Coast will leave Blackheath, Bromley South, and Herne Hill on Saturdays.

NON-STOP RUNS

There is to be a considerable increase in the number of expresses advertised to make non-stop journeys varying between 200 and 400 miles. Examples:—

	Miles
Daily	
9.30 a.m. Kings Cross to Edinburgh	393
9.45 a.m. Edinburgh to Kings Cross	393
10.0 a.m. Euston to Glasgow	401½
Saturdays only	
10.10 a.m. Paddington to Torquay	199½
10.30 a.m. Paddington to Truro	279½
10.35 a.m. Paddington to Plymouth	225½

ACCELERATED SERVICES

A number of main-line weekday and Sunday services are to be accelerated by from 5 to 60 minutes. Due to necessary speed restrictions on account of pending track repairs, and to difficulties which are still being met with in the supply of sufficient good quality coal, the time it not yet ripe, however, for a greater raising of train speeds, but as higher standards of track maintenance are achieved so will higher speeds be reached. Examples:—

	Acceleration times
Weekdays	
12.10 p.m. Bristol to Paddington	20 min.
4.0 p.m. Glasgow to Leeds	16 min.
7.30 a.m. Exeter to Waterloo	37 min.
9.29 a.m. Fort William to Edinburgh	25 min.

	Summer, 1949	Summer, 1948	Increase
Restaurant cars	123	98	20
Buffet cars	125	60	27
	241	55	10

Other main-line expresses are being re-timed as a direct result of suggestions made by the travelling public. Examples of this include:—

	New departure times
Weekdays	
Old departure times	
10.20 a.m. Euston to Manchester	9.45 a.m.
4.45 p.m. Kings Cross to Harrogate	5.30 p.m.
Sundays	
12.15 p.m. York to Sheffield	9.45 a.m.

Sir Eustace Missenden said that this summer between London and High Wycombe and Princes Risborough there was to be a fast train every hour and a slow train every hour; these trains will run from Marylebone instead of Paddington. In the peak hours the service between Marylebone and Ruislip will be extended.

MORE NAMED TRAINS

The following 13 named trains to run this summer are additional to those already operating:—

	Between
The Pines Express	Manchester and Bournemouth
The Devonian	Bradford and Kingswear
The Capitals Limited	Kings Cross and Edinburgh
The White Rose	Kings Cross and Leeds and Bradford
The West Riding	Kings Cross and Leeds and Bradford
The Devon Belle	Waterloo and Plymouth and Ilfracombe
The Thanet Belle	Victoria and Ramsgate
The Bon Accord	Glasgow and Aberdeen
The St. Mungo	Glasgow and Aberdeen
The Granite City	Glasgow and Aberdeen
The Fife Coast Express	Glasgow and St. Andrews
The Irishman	Glasgow and Stranraer Harbour
The Fenman	Liverpool Street and Hunstanton

The Government's Economic Survey for 1949 has recently made clear "it has been decided that as a temporary measure the railways' replacement programme should be kept at a restricted level." Their renewal programmes for 1949 provide for an expenditure of over £40 millions on the production of new locomotives, carriages, freight vehicles, road-rail containers, permanent way, etc.

There will be 1,350 new passenger carriages in service at the end of May compared with a year ago and 400 more existing carriages by a reduction in the number out of service for repairs. Against this, 820 carriages have had to be broken up in this period. Thus the net increase in passenger carriages available will be 930—a welcome addition to the working stock which even then will be over 4,000 carriages less than before the war. (The estimated number of carriages available at end of May, 1949, is 36,880; at mid-1939 it was 41,250.) The locomotive position has considerably improved and 167 more locomotives of suitable types are available for this year's summer traffic, as compared with last year. Of these, 68 are of the most powerful passenger types.

NEW SHIPS; EXTRA SAILINGS

New ships providing improved services on British Railways' short sea routes this summer will include: two new motorships on the Holyhead-Kingstown route, each conveying 2,000 passengers compared with 1,500 in the vessels which they are replacing; the 22-knot *Maid of Orleans* on the Folkestone-Continent route; and two new ships on the Isle of Wight services. Increased cross-channel services for accompanied motor cars are being provided from Dover and Folkestone. To meet the increase which is expected in Anglo-French traffic, the Southampton-St. Malo direct service will run three times a week this summer instead of twice weekly.

IMPROVEMENTS AT PORTS

Improvement schemes in progress at railway ports include:—

At Southampton an extensive new maritime station is under construction at Ocean Dock, principally designed for dealing with the "Queens." The building, when completed, will be on two floors, and will embody all the most up-to-date facilities for the rapid handling of large numbers of passengers and their baggage and their arrival and departure by train or car. This passenger terminal will be second to none in the world for comfort and rapid handling of transatlantic traffic.

At Newhaven, the facilities for passengers travelling by the Dieppe route are being improved.

At Parkeston Quay, through which large numbers of passengers pass daily to and from the Hook-of-Holland, Antwerp and Esbjerg, a number of improvements are being carried out, particularly in the baggage and immigration halls, and it is hoped to have some of these completed in time for the summer traffic.

At Holyhead, the accommodation for customs examination is being extended so as to expedite the landing of passengers from the two new motorships *Cambria* and *Hibernia*.

SAILING TICKETS

Considerable relaxation will be made in the requirements for sailing tickets to Ireland. The time limit of 56 days for the issue of advance sailing tickets will not operate this year, and, broadly, sailing tickets will be required only at week-ends,

with a few extra mid-week dates during the busiest period on certain routes.

BRIGHTER STATIONS

This year, 1,166 British Railways stations are to be completely repainted, compared with 766 last year. The 1949 programme includes London termini such as Victoria, Charing Cross, London Bridge, Blackfriars, Paddington, and St. Pancras, and provincial stations including Manchester (Victoria), Liverpool (Lime Street), Chester, Exeter (St. David's), Brighton, Dover (Marine), Folkestone Harbour, Nottingham (Victoria), and Glasgow (St. Enoch and Queen Street).

It is planned to overtake all arrears of station painting within six years.

Western Region Summer Services

The Western Region summer timetable, which comes into operation on May 23, will include 73 new main-line and cross-country services, 54 of which will run only on Friday evenings or Saturday mornings to cater for the heavy holiday travel expected at weekends. A number will be direct through trains between North of England, Midlands, and South Wales industrial centres and the South and West of England, which will save holiday-makers the expense and trouble of crossing London. New non-stop runs will be introduced between Paddington and the West of England holiday areas.

Through trains, on certain Fridays and Saturdays during July and August, from Ealing Broadway to Swansea, Carmarthen and Penzance will save passengers from the outer London stations having to travel via Paddington.

In addition to the branch lines opened on Sundays last summer, i.e., Clevedon, Minehead, Tiverton, Tavistock, Newquay, St. Ives and Porthcawl, it is proposed to provide a service on Sundays over the Moretonhampstead, Brixham, Looe, Fowey, and Perranporth branches.

Seats will be reserved at weekends this summer as well as during the week. Reservations will be available on 84 main-line and cross-country trains, including 68 on Saturdays, whereas they were available on 27 main-line trains from Mondays to Fridays only last summer.

Restaurant car facilities will be provided on 90 weekday and 34 Sunday services, as compared with 61 weekday and 20 Sunday trains last summer.

Viaduct Cover-Plate Renewals under Traffic

(Concluded from page 469)

caused rail level to rise by this amount, a run-off ahead of each span serially was arranged with graduated shims under the rail bearing plates. Bolts were replaced by full riveting and guard-rails refixed.

The average period of line occupation required was 3 hr. for renewing the cover-plates of each 80-ft. span, and 1½ hr. for each 40-ft. span. The work was carried out by two of the company's structural steel gangs, or by about 16 men under a foreman. These renewals were carried out under the general direction of Mr. I. H. Schram, Chief Engineer, Erie Railroad, and under the direct supervision of the late Mr. A. A. Visintainer, Engineer for Structures, whose article describing the work in our American contemporary *Railway Engineering & Maintenance* has provided us with the foregoing details.

Staff & Labour Matters

N.U.R. Wage Claim

After a meeting of N.U.R. delegates held in London on April 21 and 22 to consider the position arising from the rejection by the Railway Staff National Tribunal of the claim for a flat-rate increase of 12s. 6d. a week for all salaried and wages grades, the delegates instructed their President, Mr. W. T. Potter, the General Secretary, Mr. J. B. Figgins, and six other representatives to seek an interview with the Prime Minister, the Minister of Labour, and the Minister of Transport with a view to securing Government intervention in the dispute.

The deputation was requested to emphasise the dissatisfaction which exists in the industry and to stress the difficulty of maintaining industrial peace and the disastrous effect which failure to do so would have on the national economy.

The Prime Minister was not available, and the deputation then proceeded to the Ministry of Labour, where they saw Sir Robert Gould, Chief Industrial Commissioner, and arrangements were made for the delegates to meet Mr. Isaacs and possibly Mr. Barnes on April 26. The delegate conference then adjourned until April 28.

The claim of the N.U.R., which was largely based on the increase in the cost of living, was refused by the Railway Staff National Tribunal after hearing evidence on behalf of the N.U.R. and the Railway Executive on March 7 and 8, but the claim was not supported by the other two railway unions, the R.C.A. and the A.S.L.E. & F.

Questions in Parliament

Transport Services in Nyasaland

Mr. H. D. Hughes (Wolverhampton West—Lab.) on April 13 asked the Secretary of State for the Colonies what plans existed for the improvement of transport of food to the famine areas of north Nyasaland; and what steps had been taken to provide for a steamer service on Lake Nyasa to link the territory with the railway at Mikindani.

Mr. D. R. Rees-Williams (Parliamentary Under-Secretary of State for the Colonies), in a written answer, stated: It is likely that the Northern Province of Nyasaland will produce enough food for its own needs. No steps have been taken to link existing steamer services on Lake Nyasa with the railway from Mikindani because plans for the extension of the latter beyond Noli, which is over 200 miles from Lake Nyasa, have not been worked out.

Argentine Railway Pensioners

Mr. J. L. Williams (Glasgow, Kelvin-grove—Lab.) on April 12 asked the Secretary of State for Foreign Affairs if he was aware that remittances forbidden from Argentina included small pensions to ex-railwaymen or their dependants now in this country; and if he would take steps to have those payments resumed.

Mr. C. P. Mayhew (Parliamentary Under-Secretary of State for Foreign Affairs): I would refer Mr. Williams to the reply given in the House on March 21, when it was explained that it is now possible for amounts not exceeding 250 pesos a month to be remitted to these British pensioners in this country. This restriction on the remittance of pensions in full is one aspect of the larger financial problem of payments between this country and Argentina, which is being actively

pursued during the current negotiations in Buenos Aires.

Mr. Williams: Is the Under-Secretary aware that in the last three months many of these pensioners have spent sums of about £6 each on legal requirements, such as survival certificates and powers of attorney, in order to get a pension of less than £1 a week; that they have not qualified for National Insurance benefits in this country, and that many cases of hardship are involved?

Mr. Mayhew: I am aware that this is causing distress. We are doing our best in the present negotiations in Argentina.

Mr. D. L. Lipson (Cheltenham—Ind.): Can the Under-Secretary of State say how much 250 pesos amounts to in English currency?

Mr. Mayhew: I think it is about £12.

SPECIAL MUD FLAPS FOR BIRMINGHAM BUSES.—Fifty new Birmingham buses now being built by the Metropolitan-Cammell Carriage & Wagon Co. Ltd. are being fitted with special mud flaps. These are the result of experiments undertaken for the Birmingham & Midland Motor Omnibus Company at Fort Dunlop and they are fitted round the edge of the bus platforms. The flap is attached to the under side of the platform at 9 in. to 12 in. intervals by mild-steel 4 in. by 1½ in. angle brackets with ½ in. nuts and bolts with large washer plates on the outer side of the flap.

Musical Broadcasts at Waterloo Station

(Concluded from page 471)

broadcast from a box which originally was situated over a kiosk at the head of platforms 8 and 9, but subsequently was transferred to its present position above the offices separating the Windsor and main line stations. At present, there are no ordinary announcements on weekday mornings between 7 and 8 a.m., though records and train details are intermingled from 8 a.m. onwards. It always has been the practice to regard the music as secondary in importance to verbal announcements, and should the need arise, due preference is accorded in this way.

The broadcasting installation was planned and carried out by the General Electric Co. Ltd. and Southern Region engineers working in collaboration, and the record player has been designed to fit in the restricted space available. A Connoisseur lightweight moving-iron pick-up, with a frequency response of up to 10,000 cycles per sec., is used, taking Silent Stylus miniature needles, which will play some twelve sides with high fidelity, and can be used for fifty sides without damage to records. The turntable is driven by a Garrard induction motor, controlled by a G.E.C. Mutac silent a.c. switch.

Two pre-set tone controls, adjusted respectively to provide the best rendering of speech and music in the acoustic conditions at the station, are fitted to the driver panel of the amplifier installation. When the announcer operates the microphone music switch on the control unit, the appropriate tone control is brought into circuit automatically, by means of a relay.

Several other measures have been taken to ensure high-quality reproduction, such as the use of Multibeam wide frequency range loudspeakers and an amplifier output stage of a type developed for radio relay services. Two Osram DA.100 triode valves are used in push-pull in this stage, providing an output of 100 watts.

Notes and News

Senior Draughtsman Required.—A senior draughtsman, with railway locomotive or carriage experience, is required by a firm in Birmingham. See Official Notices on page 483.

Port of London Authority—Vacancies for Draughtsmen.—Applications are invited from British subjects for the posts of 1st and 2nd Class draughtsmen required by the Port of London Authority. See Official Notices on page 483.

Erector for Bridge Reconstruction Required.—Applications from qualified candidates, under 40 years of age, are invited for the post of erector for bridge reconstruction, required by the Nigerian Railway, temporary staff, for one tour of 18 to 24 months in the first instance. See Official Notices on page 483.

Grade II Clerks Required.—Applications from qualified candidates are invited for the posts of clerks, grade II, required by the East African Railways & Harbours Administration for the transportation department, for one tour of 40 to 48 months, with prospects of permanency. See Official Notices on page 483.

K. & L. Steelfounders & Engineers Limited.—At the Castle Bromwich, Birmingham, section of the British Industries Fair, K. & L. Steelfounders & Engineers Limited exhibit of locomotive castings will include a new design of wheel centre known as the "S.C.O.A.-P" and a $\frac{3}{4}$ in. to 1 ft. scale working model of former L.N.E.R. "A3" Pacific *Felstead*. This model was made by Mr. A. H. Miller, former Plant Engineer to K. & L. Steelfounders & Engineers Limited.

Frog Rammers to Speed Work.—The Railway Executive is placing an order with a British firm for six half-ton frog rammers to facilitate the work of strengthening weak formations under ballasted track. The rammer, which in appearance is rather like a large barrel, moves over the ground in short leaps, consolidating the layer of stone dust or sand

which is laid over the clay when treating weak formations. Ballast is subsequently spread over this material and the track laid on it in the normal way. The use of this petrol-driven machine speeds up the work and enables speed restrictions to be relaxed sooner than would otherwise be possible.

The Swiss Industries Fair.—The thirty-third Swiss Industries Fair will be held at Basle from May 7-17 and will be a national rather than an international exhibition. There will be some 22½ acres of floor space which will be divided into various sections, including electrical, building and construction, machinery, and transport.

Simplex Electric Co. Ltd. at B.I.F.—The Simplex stand in the electrical section at Castle Bromwich, British Industries Fair, will show a range of products manufactured by the Simplex and Creda divisions of the company. Recent developments in the steel conduit system will be shown, including aluminium alloy conduit, zinc alloy conduit fittings, and a selection of switch and plug fittings. The new electric restaurant cooking range, which is representative of Creda heavy-duty equipment for hotels, restaurants, canteens, and ships, and a new glass hot-cupboard for the counter display of food-stuffs, will also be shown.

L.M.S. Stock Conversion Trust.—In deference to the wishes of preference stockholders, as reported in our issue of January 30, 1948, a revised basis for the winding-up of the company and the distribution of the Transport Stock at present held by it is now put forward by the London Midland & Scottish Stock Conversion Trust. Under the new proposals 84.7458 per cent. of the holding of Transport Stock will be distributed to preference stockholders, 10.1695 per cent. to the preferred, and 5.0847 per cent. to the deferred. This would result in individual holders receiving Transport Stock at the rate of £25 per £100 preference stock, £6 per £100 preferred stock, and £1 10s. per £100 deferred stock. The proposals have been formulated, in consultation with the

Association of Investment Trusts and the Investment Protection Committee of the British Insurance Association, both of which recommend their interested members to support the new scheme. If approved, the matter will be brought again before the Court for further directions.

British Transport Commission Inspects Tilling Installations.—Sir Cyril Hurcomb, Chairman of the British Transport Commission, and Sir William Wood, Member, B.T.C., and Mr. George Cardwell, Member of the Road Transport Executive, together with Senior Officers of the Commission, inspected installations of the Tilling organisation at Bristol on April 27. Staff amenities received special attention. In the afternoon the party visited the various works of the Bristol Tramways & Carriage Co. Ltd.

G. A. Harvey & Co. (London) Ltd.—At the Castle Bromwich Section of the British Industries Fair, the firm of G. A. Harvey & Co. (London) Ltd. will be showing a wide range of products, including Harco perforated metals for screening, grading, cleaning, sorting, and filtering; mild-steel gutters, pipes, and fittings; and Harco Tapergil gilled tube. This firm is now able to undertake the manufacture of pressure vessels, autoclaves, fractionating and absorption towers in steel plate up to 3 in. thickness and of any diameter and length.

James Booth & Co. Ltd. Report.—The directors have decided to recommend a dividend of 20 per cent., less income tax, on the ordinary shares for the year ended December 31, 1948. The profit and loss account shows a net surplus of £111,093 for the year, and to this has to be added £259,726 brought forward from the previous year, out of which a dividend has been paid on the preference shares. An amount of £35,000 is being placed to stock reserve, and £35,737 for development, deferred repairs, etc., leaving £293,922, from which the proposed dividend on the ordinary shares will be paid, leaving £211,422 to be carried forward.

British Automatic Company Slot Machine Licence.—On April 22 the British Automatic Co. Ltd. stated that, despite the end of sweets rationing, it would be unable to restore immediately facilities for buying sweets and chocolates from automatic machines, because, though some goods were available and machines ready, the Ministry of Food had refused to renew the licence to trade. A representative of the Ministry of Food explained that licensing restrictions remained in force after sweet rationing ended, and the Minister did not consider it desirable to allow any more distribution points for sweets until they could see how derationing went. For the present, therefore, slot machines may only be installed and stocked in sweet shops or kiosks.

The English Electric Co. Ltd.—Sir George H. Nelson, Chairman, in his address to the shareholders at the annual general meeting on March 30, said that their turnover had increased by £5 million last year, and their uncompleted order book was again the highest ever. Nearly 50 per cent. of their production was for export and thus the company was making a substantial contribution to the balance of payments in both sterling and dollar areas. Only 77 per cent. of their total manufacturing capacity was in use at the present time because of the need for an additional 5,000 workpeople. The greatest

Petrol-Driven Frog Rammer at Work



Frog rammer for strengthening weak formations under ballasted track (see paragraph above)

OFFICIAL NOTICES

Crown Agents for the Colonies

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

THE PORT OF LONDON AUTHORITY invite applications from British subjects for (a) 1st Class Draughtsman, salary £500-£20-£600 per annum; (b) 2nd Class Draughtsman, salary £430-£20-£470 per annum. Commencing salary will be according to qualifications and experience. Candidates for (a) should be experienced as Structural and Civil Engineering Draughtsmen in the design and detailing of reinforced concrete and/or steelwork for Dock Construction such as quays, jetties, lock gates, warehouses, sheds or bridges, and able to make general surveys for new works and to take site measurements. Candidates for (b) should have similar training. Application forms are obtainable from the ESTABLISHMENT OFFICER, PORT OF LONDON AUTHORITY, Trinity Square, E.C.3.

F. W. NUNNELEY,
Secretary.

APPLICATIONS from qualified candidates are invited for the following posts:—

CLERKS, Grade II, required by the East African Railways and Harbours Administration for the Transportation Department, for one tour of 40 to 48 months, with prospects of permanency. Salary according to age and experience in the scale £462 by £18 to £570 a year. Free quarters and passages. Superannuation fund. Outfit allowance £30. Candidates not over 30 years must hold a General Schools Certificate and have had good all-round British Railway training. Commercial and operating experience would be an advantage. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/21465 (3E) on both letter and envelope.

SENIOR DRAUGHTSMEN required with Railway Locomotive or Carriage experience. Apply by letter giving full details.—**BRITISH TIMKEN LIMITED**, Cheston Road, Aston, Birmingham.

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

ERECTOR for Bridge Reconstruction (Capital Works) required by Nigerian Railway, Temporary Staff, for one tour of 18 to 24 months in the first instance. Consolidated salary £985 a year. Outfit allowance £60. Free first class passages. Candidates, preferably single, and aged under 40, must have had experience on the construction and re-erecting of large Railway Bridges, including the erection of falsework with piled foundations. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/24291/3D on both letter and envelope.

SECTIONED PERSPECTIVE VIEW OF LOCOMOTIVE FRONT END. A notable drawing of L.M.S.R. class "7P" 4-6-2 locomotive of the latest type. Reprinted from *The Railway Gazette*, June 15, 1945. Price 2s. 6d. Post free 2s. 8d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

problem in industry today arose from the heavy scale of income tax. Means must be found to reduce taxation, because otherwise it would become a cancer in the life of the nation, and there were already unmistakable signs of the disease. The real cause of excessive taxation was inflated expenditure by the State. Until the principles of economy which every individual and every business undertaking had to apply to its own affairs were applied to public expenditure, without regard to party or political considerations, there would be no relief from the burdens which were today strangling enterprise and initiative. The financial results of the company for 1948 were given in our issue of February 11.

B.T.H. Exhibits at the B.I.F.—Among the products exhibited by the British Thomson-Houston Co. Ltd. at the Castle Bromwich section, B.I.F., will be a 275,000-volt oil break circuit-breaker, electric motors and control gear for machine tools, electronic equipment, Mazda lamps, and Mazdalux lighting equipment. The firm's gas turbine developments will be represented by a model of a 1,200-b.h.p. unit driving an electric generator for ship propulsion. Other B.T.H. exhibits will include fractional h.p. motors, geared-motor units of various sizes, small industrial die-cast motors and several types of industrial control gear units. Electronic equipment shown will range from photo-electric relays and electronic timers to sound-film projectors and control panels for the largest spot- and seam-welding machines.

Co-ordination of Rates and Charges in Argentina.—In our issue of March 4 we quoted *The Review of the River Plate* on co-ordination of rates and charges in Argentina. We now learn from our Argentina correspondent that the information given therein was erroneous and that the correct information is that only the new goods, livestock, and parcels rates have been applied as from February 1, and the basic passenger rates have been left in suspense for an indefinite period. All special tariffs have not been eliminated in favour of "basic rates," as all passenger traffic is governed by special tariffs and the basic maxima exist only in theory in so far as they will not now be applied, at least for some time. As regards goods, livestock and parcels traffic, the greater part is charged according to special tariffs, which have increased rather than decreased as a result of the reorganisation.

Hoffmann Bearings on the New Trains for Southend Pier Railway.

The new trains for the Pier Railway, Southend-on-Sea, which were referred to and illustrated in our issue of April 22, are equipped with bearings supplied by the Hoffmann Manufacturing Co. Ltd., Chelmsford, Essex. These bearings are fitted to the wheels, worm drives, and traction motors of the new coaches.

Fluorescent Lighting at Acton Works.

—In connection with the reorganisation of the car-body shop at the London Transport Executive Acton works, which was described in our March 4 issue, a fluorescent lighting installation using 300 General Electric Co. Ltd. continuous trough fittings has been brought into use in the fittings area. The car-body shop, as a whole, is 400 ft. long by 100 ft. wide, and in the fittings area there are three parallel runs, spaced 9 ft. 3 in. apart, of 5-ft. fluorescent lamp continuous trough fittings, each run being 380 ft. long. Shorter continuous runs of fittings are provided in adjacent areas, as for instance in the drawgear section and the store. The fittings are mounted at 13 ft. 4 in. above ground level by means of chains from pipes fixed on the roof trusses; this gives an illumination of 28-29 foot-candles on the benches. All the fittings have self-

contained control gear giving instant start operation, and are arranged for London Transport's 33½-cycle 3-phase 4-wire supply. The lighting installation and power supply work has been carried out by the Signal Engineer's Department, L.T.E.

Sixty Years in Railway Signalling.—On his retirement this week Mr. E. C. Clark completes 60 years' service with Tyer & Co. Ltd., the firm of electrical and signalling engineers, which celebrates its centenary in 1951. Mr. Clark, who is 72, joined the company in 1889; he has latterly been in charge of the coil winding shop, and all his service has been at the firm's main factory in Ashwin Street, Dalston, E.8. His early memories include that of working a 54-hour week, starting each weekday at 6 a.m.; and overtime, he says, was willingly worked when necessary. In the very early days all the skilled fitters at Tyers were recruited from the clock-making industries.

American Interest in Travel to Britain.

—An increase of 28 per cent. as compared with last year in the number of enquiries from Americans about travel to Great Britain, and a 50 per cent. increase over pre-war years in tours to this country sold by American travel agents, is reported by the New York representatives of the Travel Association of the Tourist

Fluorescent Lighting for Car-Body Shop, Acton Works

A fluorescent lighting installation using 300 General Electric Co. Ltd. continuous trough fittings has been brought into use in the fittings area of the car-body shop at London Transport's Acton works

Division of the British Tourist & Holidays Board. A recent survey by the Association of the leading travel agencies in American cities provided further evidence of the growing interest in travel to the United Kingdom and confirmed reports that bookings for the 1949 season will reach a record high level. Most agencies agreed, also, that interest is growing in travel during the off-peak months.

Morgan Crucible Co. Ltd. Exhibits.—Carbon strips for the pantographs of electric locomotives and multiple-unit electric trains are among the products to be exhibited by the Morgan Crucible Co. Ltd. at the Birmingham Section of the British Industries Fair. Other products include Morganite carbon brushes for electric motors and generators, and carbon sliding current collectors for cranes and trolley booms. Specimens of Morganite carbon pantograph strips as used on the Swiss Federal Railways, and on the French, Belgian, Dutch, Swedish, and Danish railways, also will be shown.

Scottish Region Ambulance Competition.—The final stage of the Scottish Region Ambulance Competition was held at the Headquarters of the St. Andrews Ambulance Association, Glasgow, on April 12, when the Railways Shield was won by Glasgow (Eglinton Street) with 262 points. Runners-up were Dunfermline, 248½ points; and Perth, 245½ points. Mr. T. F. Cameron, Chief Regional Officer, Scottish Region, spoke, and Mrs. Cameron presented the Shield and prizes. Others taking part included Mr. T. H. Moffat, Deputy Chief Regional Officer and President of the Council of the St. Andrews Ambulance Association; Mr. R. Marshall, General Secretary of the St. Andrews Ambulance Association; Mr. G. S. Bellamy, Mechanical & Electrical Engineer; Mr. E. D. Trask, Assistant Motive Power Superintendent; and Mr. R. Simpson, Regional Staff Officer.

Forthcoming Meetings

- April 29 (Fri.).—Institution of Mechanical Engineers, Storey's Gate, St. James's Park, London, S.W.1, at 6 p.m. Presentation of James Watt International Medal to Dr. Fredrik Ljungstrom of Sweden, and special lecture by the recipient.
- April 30 (Sat.).—British Railways, Southern Region, Lecture & Debating Society. Visit to Romney, Hythe & Dymchurch Railway.
- May 4 (Wed.).—Oxford University Railway Society, at Jesus College, at 8.15 p.m. "An Express Driver Looks Back," by Mr. L. A. Earl, formerly of Camden, L.M.S.R.
- May 6 (Fri.).—Institute of Traffic Administration, Sheffield Centre, at the Y.M.C.A., Sheffield, at 7.30 p.m. "The Job—Traffic Administration," by Mr. A. Lawes Cole.
- May 6 (Fri.).—Engineers' Guild, at the Rankine Hall, Institution of Engineers & Shipbuilders, 39, Elmbank Crescent, Glasgow, C.2, at 7 p.m. Discussion: "The Guild as an Association of Professional Engineers," to be followed by inauguration of the Scottish Branch. Chairman: Mr. W. Linn; Speakers, Messrs. R. Chalmers and J. H. W. Turner.
- May 7 (Sat.).—Electric Railway Society. Visit to Durnsford Road Power Station, Wimbledon Park, London, S.W.19.

Railway Stock Market

Despite the stimulus provided by the record jump of over £3,000,000 in Imperial Chemical profits industrial shares turned easier. British Funds were a firm exception and business in gilt-edged remained on a good scale in anticipation of the initial dealings next week in the £200,000,000 of British Gas stock. Terms of this stock can be expected to govern the general trend in British Funds. If it is a 3 per cent. security and longer-dated than other nationalisation stocks it can be expected that the latter will resume their upward movement. Transport (1978-88) at 102½ was again higher on balance, as, also, was Transport (1967-72) at 102, and Transport (1968-73) at 102½.

Revived talk of take-over developments has maintained a good deal of activity in Leopoldina stocks, a price of £10,000,000 again being suggested in the market, although there is uncertainty whether this estimate would include the Leopoldina Terminal Company as well. In any case a take over at this figure would mean that current market prices of all the Leopoldina stocks are undervalued. Interest has centred mainly on the debentures, reflecting caution induced by the knowledge that, previously, market estimates of take-over values have frequently proved optimistic. The 4 per cent. debentures have rallied to 91½, with 6½ per cent. debentures 120, while the Terminal 5 per cent. debentures were also better at 89. Leopoldina ordinary in contrast has been dull at 94 and the preference stock eased to 32½. San Paulo showed firmness at 154 and Great Western of Brazil shares moved up again to 128s. 9d.

In other directions Manila "A" debentures eased to 92 and the preference shares were 8s. 6d. Antofagasta ordinary and preference have been steady at 8½ and 54 respectively, though United of Havana 1906 debentures were down to 12½, awaiting further news from Cuba. Canadian

Pacific have receded to slightly under 184. Beira Railway bearer shares eased to 50s. Mexican Railway 6 per cent. debentures were 86½. Nyasaland Railways 3½ per cent. debentures were 102, with the ordinary shares at 3s. 9d. French railway sterling bonds have been steady with Midi and Orleans at 94.

Road Transport shares were again firm with few sellers reported. Lancashire Transport strengthened to 91s., Southdown were 105s., West Riding 77s. 6d., and Scottish Motor 105s. 6d. B.E.T. deferred stock continued to fluctuate and at £1,820 was lower on balance. The market view persists that there are unlikely to be further take-over developments this year in respect of leading passenger road transport companies.

Iron and steel shares remained very steady with United Steel at 29s. 6d., Dorman Long 32s. 9d., Stewarts and Lloyds 56s. 7½d., and Colvilles 37s. 3d. Babcock & Wilcox strengthened to 67s. 6d., awaiting the results, and Tube Investments were higher at £6½. Vickers and Cammell Laird have remained firm at 33s. 4½d. and 17s. 3d. respectively on expectations that the full reports and annual meetings will provide information as to the position in regard to a bonus. Sooner or later it is expected there will be a bonus in the form of a writing up of the nominal value of the shares which would restore capital lost by shareholders under past reconstructions.

Locomotive building and engineering shares moved slightly lower where changed and sentiment was affected by fears that it may be some time before larger remittances will be permitted from the Argentine. Vulcan Foundry eased to 23s. and North British Locomotive to 20s. 9d. Beyer Peacock were 22s., Gloucester Wagon 51s. 10½d., Hurst Nelson 75s., Charles Roberts 138s. 9d., and Birmingham Wagon 32s. 6d. Wagon Repairs 5s. shares changed hands around 20s. 6d.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date	
				Total this year	inc. or dec. compared with 1947/48		Total	Increase or decrease
							1948/9	
South & Central America	Antofagasta...	811	17.4.49	£ 48,630	—	15	£ 1,057,600	+ £ 226,800
	Bolivar ...	174	July, 1948	\$28,960	—	30	\$471,287	— \$301,893
	Brazil ...	...	...	...	...	...	...	...
	Cent. Uruguay ...	970	6.11.48	32,712	+ 2,978	18	593,105	— 7,652
	Costa Rica ...	281	31.1.49	35,772	— 3,648	31	250,009	+ 12,870
	Dorada ...	70	Jan., 1949	31,649	+ 8,549	4	31,649	— 8,549
	G.W. of Brazil ...	1,040	16.4.49	33,300	— 1,200	15	597,600	— 2,500
	Inter. Ctl. Amer. ...	794	Feb., 1949	\$999,184	— \$183,327	8	\$2,088,986	— \$382,179
	La Guaira ...	223	Mar., 1949	\$113,758	— \$9,571	13	\$329,753	+ \$38,114
	Leopoldina ...	1,920	16.4.49	41,075	— 16,152	15	694,131	+ 146,796
	Midland Uruguay ...	319	Sept., 1948	19,608	+ 3,123	12	67,355	+ 16,721
	Nitrate ...	382	15.4.49	18,352	+ 5,014	15	123,619	+ 37,290
	N.W. of Uruguay ...	113	Sept., 1948	5,686	— 1,213	12	16,335	+ 1,989
	Paraguay Cent. ...	274	15.4.49	£85,115	+ £23,797	41	£4,252,973	+ £1,493,278
	Peru Corp. ...	1,059	Feb., 1949	221,585	+ 69,198	35	1,604,881	+ 245,802
Canada	Salvador ...	100	31.12.48	c267,000	+ c16,000	26	c776,000	+ c53,400
	San Paulo ...	153½	...	...	...	...	...	...
	Taitai ...	156	Mar., 1949	11,410	— 395	39	80,340	+ 9,930
	United of Havana ...	1,301	16.4.49	\$461,007	— \$128,866	41	\$11,420,787	— \$3,571,348
	Uruguay Northern ...	73	Sept., 1948	1,072	+ 52	12	3,308	+ 111
	Canadian National...	23,473	Feb., 1949	9,225,250	+ 721,000	8	18,552,500	+ 1,547,750
	Canadian Pacific ...	17,037	Feb., 1949	6,725,000	+ 653,500	8	13,666,750	+ 1,363,750
	Barsi Light*	202	Mar., 1949	27,007	+ 4,380	52	332,682	+ 36,885
	Beira ...	204	Jan., 1949	119,237	+ 2,927	18	484,544	+ 15,321
	Egyptian Delta ...	607	...	18,224	— 1,856	47	65,526	+ 103,202
	Gold Coast ...	536	Feb., 1949	239,784	+ 40,316	48	2,385,740	+ 579,253
	Manila ...	...	...	...	...	...	...	...
	Mid. of W. Australia ...	277	Feb., 1949	26,956	+ 5,101	35	230,008	+ 45,625
	Nigeria ...	1,900	Jan., 1949	588,386	+ 66,599	41	4,751,241	+ 851,938
	Rhodesia ...	2,445	Sept., 1947	643,980	+ 102,833	52	6,787,603	+ 612,938
Various	South Africa ...	13,347	2.4.49	509,705	+ 51,451†	1	509,705	+ 51,451†
	Victoria ...	4,774	Dec., 1948	1,493,106	+ 33,958	26	...	...

*Receipts are calculated @ 1s. 6d. to the rupee. †2 days only.